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United States
Department of
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Soil
Conservation
Service

In cooperation with
University of Florida,
Institute of Food and
Agricultural Sciences,
Agricultural Experiment Stations
and Soil Science Department,
Florida Department of
Transportation,
and the Florida Department of
Agriculture and
Consumer Services

Soil Survey of Sumter County, Florida

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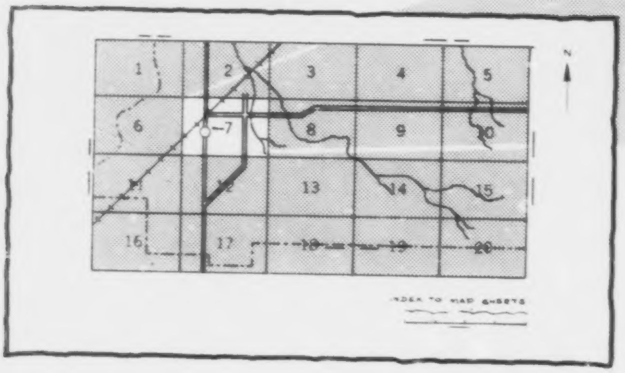
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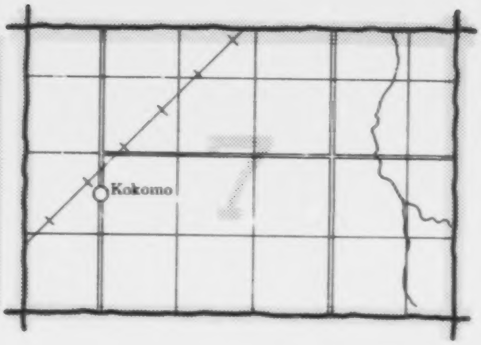

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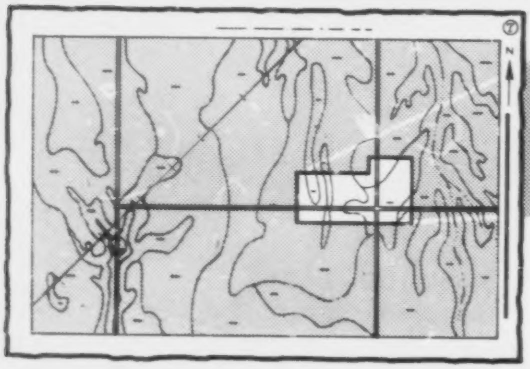

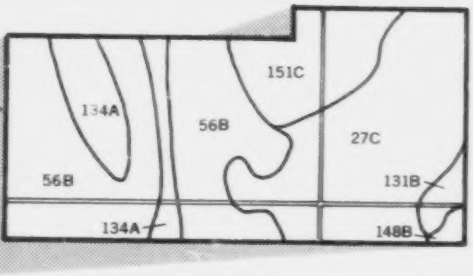
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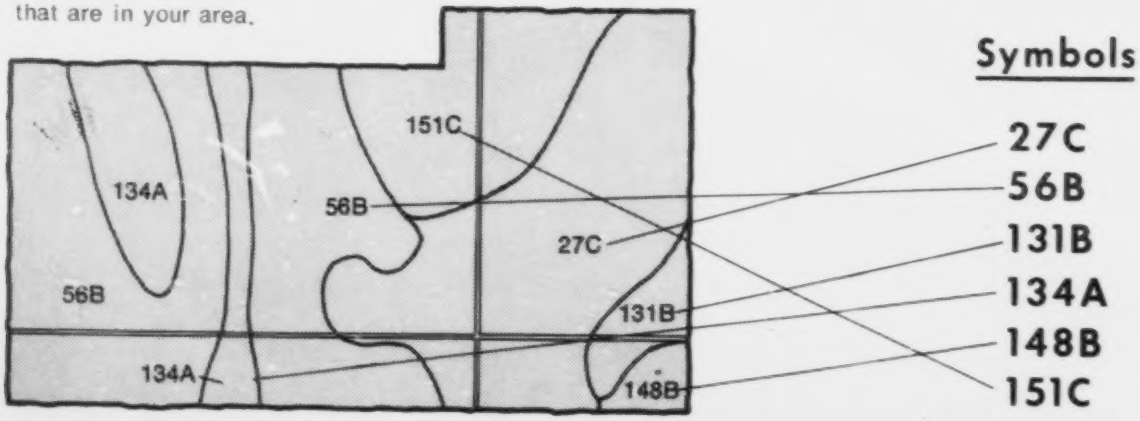
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THIS SOIL SURVEY

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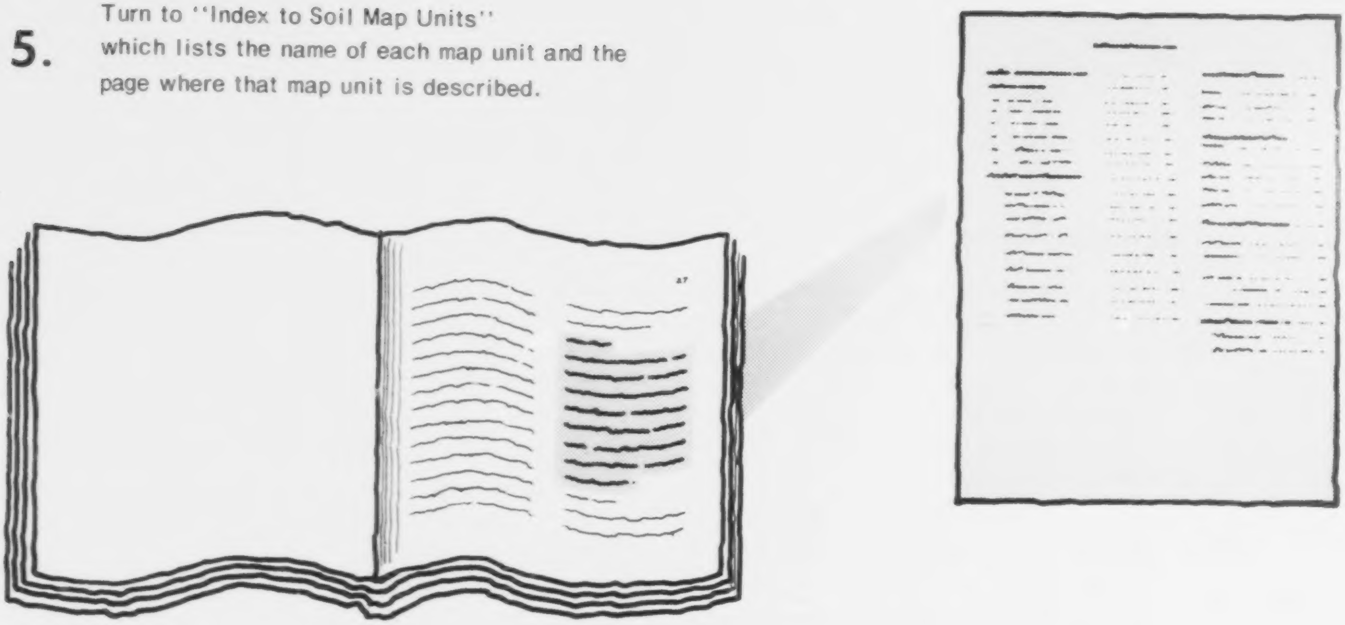
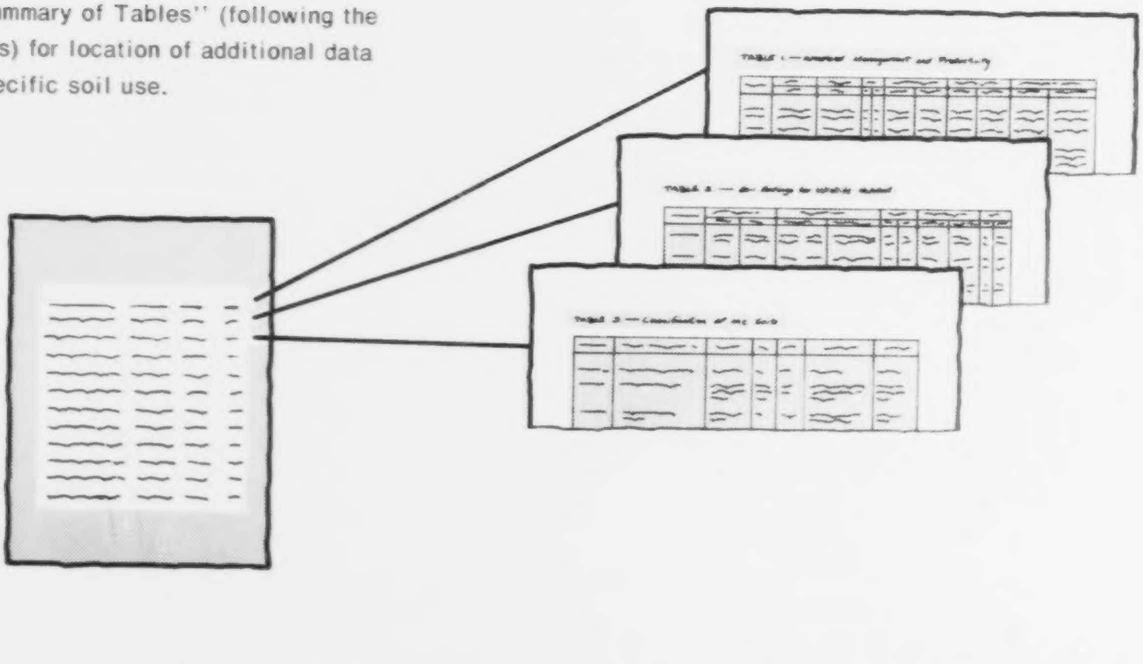


6. See "Summary of Tables" (following the Contents) for location of additional data on a specific soil use.



7. Consult "Contents" for parts of the publication that will meet your specific needs. This survey contains useful information for farmers or ranchers, foresters or agronomists; for planners, community decision makers, engineers, developers, builders, or homebuyers; for conservationists, recreationists, teachers, or students; for specialists in wildlife management, waste disposal, or pollution control.

This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other federal agencies, state agencies including the Agricultural Experiment Stations, and local agencies. The Soil Conservation Service has leadership for the federal part of the National Cooperative Soil Survey.

Major fieldwork for this soil survey was completed in 1984. Soil names and descriptions were approved in 1984. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1981-84. This soil survey was made cooperatively by the Soil Conservation Service and the University of Florida, Institute of Food and Agricultural Sciences, Agricultural Experiment Stations and Soil Science Department, Florida Department of Transportation, and the Florida Department of Agriculture and Consumer Services. It is part of the technical assistance furnished to the Sumter Soil and Water Conservation District. The Sumter County Recreation and Water Conservation and Control Authority contributed financially to accelerate the completion of the fieldwork for this survey.

Soil maps in this survey may be copied without permission. Enlargement of these maps, however, could cause misunderstanding of the detail of mapping. If enlarged, maps do not show the small areas of contrasting soils that could have been shown at a larger scale.

All programs and services of the Soil Conservation Service are offered on a nondiscriminatory basis, without regard to race, color, national origin, religion, sex, age, marital status, or handicap.

Cover: Raising beef cattle is the principle agricultural activity in Sumter County. These Bradford cattle are on improved pasture on Sparr fine sand, bouldery subsurface, 0 to 5 percent slopes.

Contents

Index to map units iv
Summary of tables v
Foreword vii
General nature of the county 1
  Geology 3
How this survey was made 6
  Map unit composition 7
General soil map units 9
Detailed soil map units 17
Use and management of the soils 65
  Crops and pasture 65
  Rangeland and grazable woodland 70
  Woodland management and productivity 71
  Recreation 74
  Wildlife habitat 74
  Engineering 76
Soil properties 81
  Engineering index properties 81
  Physical and chemical properties 82
  Soil and water features 83
  Physical, chemical, and mineralogical analyses of selected soils 84
  Engineering index test data 87
Classification of the soils 89
Soil series and their morphology 89
Formation of the soils 113
  Factors of soil formation 113
  Processes of soil formation 114
References 115
Glossary 117
Tables 125

Soil Series

Adamsville series 89
Apopka series 90
Arredondo series 90
Astatula series 91
Basinger series 91
Candler series 92
Chobee series 92
Delray series 93
EauGallie series 93
Electra series 94
Everglades series 95
Florahome series 95
Floridana series 96
Ft. Green series 97
Gator series 97
Immokalee series 98
Kanapaha series 98
Kendrick series 99
Lake series 99
Mabel series 100
Malabar series 101
Millhopper series 101
Monteocha series 102
Myakka series 103
Nittaw series 103
Okeelanta series 104
Oldsmar series 104
Ona series 106
Paisley series 105
Placid series 106
Pomello series 107
Pompano series 107
Seffner series 108
Smyrna series 108
Sparr series 109
Sumterville series 109
Tarrytown series 110
Tavares series 111
Terra Ceia series 111
Vero series 111

Issued November 1988

Index to Map Units

1—Arredondo fine sand, 0 to 5 percent slopes 17
3—Astatula fine sand, rolling 18
4—Candler sand, 0 to 5 percent slopes 18
5—Candler sand, 5 to 8 percent slopes 20
6—Kendrick fine sand, 0 to 5 percent slopes 20
8—Lake fine sand, 0 to 5 percent slopes 21
9—Paisley fine sand, bouldery subsurface 22
10—Sparr fine sand, 0 to 5 percent slopes 22
11—Millhopper sand, 0 to 5 percent slopes 23
13—Tavares fine sand, 0 to 5 percent slopes 24
14—Lake fine sand, 5 to 8 percent slopes 25
15—Adamsville fine sand, bouldery subsurface 25
16—Apopka fine sand, 0 to 5 percent slopes 26
17—Sumterville-Mabel-Tavares association, bouldery subsurface, 0 to 5 percent slopes 27
18—Okeelanta muck 28
19—Apopka fine sand, 5 to 8 percent slopes 29
20—Florahome sand, 0 to 5 percent slopes 29
21—EauGallie fine sand, bouldery subsurface 30
22—Smyrna fine sand 31
23—Ona fine sand 32
24—Basinger fine sand 33
25—Kanapaha sand, bouldery subsurface 33
26—Vero fine sand, bouldery subsurface 34
27—Sumterville fine sand, bouldery subsurface, 0 to 5 percent slopes 35
28—Seffner fine sand 36
29—Nittaw muck, frequently flooded 36
30—Placid fine sand, depressional 38
31—Myakka sand 39
32—Pompano fine sand 40
33—Sparr fine sand, bouldery subsurface, 0 to 5 percent slopes 40
34—Tarrytown sandy clay loam, bouldery subsurface 42
35—Pompano fine sand, depressional 42
36—Floridana mucky fine sand, depressional 43
37—Astatula fine sand, 0 to 8 percent slopes 44
39—Mabel fine sand, bouldery subsurface, 0 to 5 percent slopes 44
40—Millhopper sand, bouldery subsurface, 0 to 5 percent slopes 45
41—Everglades muck, frequently flooded 46
42—Adamsville fine sand 46
43—Basinger fine sand, depressional 47
44—Oldsmar fine sand, bouldery subsurface 47
45—Electra fine sand, bouldery subsurface 48
46—Ft. Green fine sand, bouldery subsurface 49
47—Okeelanta muck, frequently flooded 50
48—Malabar fine sand, frequently flooded 50
49—Terra Ceia muck, frequently flooded 51
50—Immokalee sand 51
51—Pits-Dumps complex 52
52—Candler sand, 8 to 12 percent slopes 52
53—Tavares fine sand, bouldery subsurface, 0 to 5 percent slopes 53
54—Monteocha fine sand, depressional 53
55—Pomello fine sand, 0 to 5 percent slopes 54
56—Vero fine sand, depressional 55
57—Gator muck, frequently flooded 55
58—Paisley fine sand, depressional 56
59—Arents, organic substratum 57
60—Delray fine sand, depressional 57
61—EauGallie fine sand 58
62—Urban land 59
63—Floridana-Basinger association, frequently flooded 59
64—Gator muck 60
65—Candler sand, bouldery subsurface, 0 to 5 percent slopes 60
66—Arredondo fine sand, bouldery subsurface, 0 to 5 percent slopes 61
67—Vero fine sand 62
68—Chobee loamy fine sand, frequently flooded 62

Summary of Tables

Temperature and precipitation (table 1) 126

Freeze dates in spring and fall (table 2) 127
Probability. Temperature.

Acreage and proportionate extent of the soils (table 3) 128
Acres. Percent.

Land capability classes and yields per acre of crops and pasture (table 4) 130
Watermelons. Tomatoes. Cucumbers. Bell peppers. Squash. Bahiagrass. Sorghum silage.

Capability classes and subclasses (table 5) 134
Total acreage. Major management concerns.

Rangeland productivity (table 6) 135
Range site. Potential annual production.

Woodland management and productivity (table 7) 138
Ordination symbol. Management concerns. Potential productivity. Trees to plant.

Recreational development (table 8) 145
Camp areas. Picnic areas. Playgrounds. Paths and trails. Golf fairways.

Wildlife habitat (table 9) 150
Potential for habitat elements. Potential as habitat for—Openland wildlife, Woodland wildlife, Wetland wildlife.

Building site development (table 10) 154
Shallow excavations. Dwellings without basements. Dwellings with basements. Small commercial buildings. Local roads and streets. Lawns and landscaping.

Sanitary facilities (table 11) 159
Septic tank absorption fields. Sewage lagoon areas. Trench sanitary landfill. Area sanitary landfill. Daily cover for landfill.

Construction materials (table 12) 165
Roadfill. Sand. Gravel. Topsoil.

Water management (table 13) 170
Limitations for—Pond reservoir areas; Embankments, dikes, and levees; Aquifer-fed excavated ponds. Features affecting—Drainage, Irrigation, Terraces and diversions, Grassed waterways.

Engineering index properties (table 14) 178
Depth. USDA texture. Classification—Unified, AASHTO. Fragments greater than 3 inches. Percentage passing sieve—4, 10, 40, 200. Liquid limit. Plasticity index.

Physical and chemical properties of the soils (table 15) 186
Depth. Clay. Moist bulk density. Permeability. Available water capacity. Soil reaction. Shrink-swell potential. Erosion factors. Wind erodibility group. Organic matter.

Soil and water features (table 16) 191
Hydrologic group. Flooding. High water table. Subsidence. Risk of corrosion.

Physical analyses of selected soils (table 17) 195
Depth. Horizon. Particle-size distribution—Sand, Silt, Clay. Hydraulic conductivity. Bulk density. Water content.

Chemical analyses of selected soils (table 18) 198
Depth. Horizon. Extractable bases. Extractable acidity. Sum of cations. Base saturation. Organic carbon. Electrical conductivity. pH. Pyrophosphate extractable. Citrate dithionite extractable.

Clay mineralogy of selected soils (table 19) 201
Depth. Horizon. Clay minerals.

Engineering index test data (table 20) 202
FDOT report number. Classification. Grain-size distribution. Liquid limit. Plasticity index. Moisture density.

Classification of the soils (table 21) 204
Family or higher taxonomic class.

Foreword

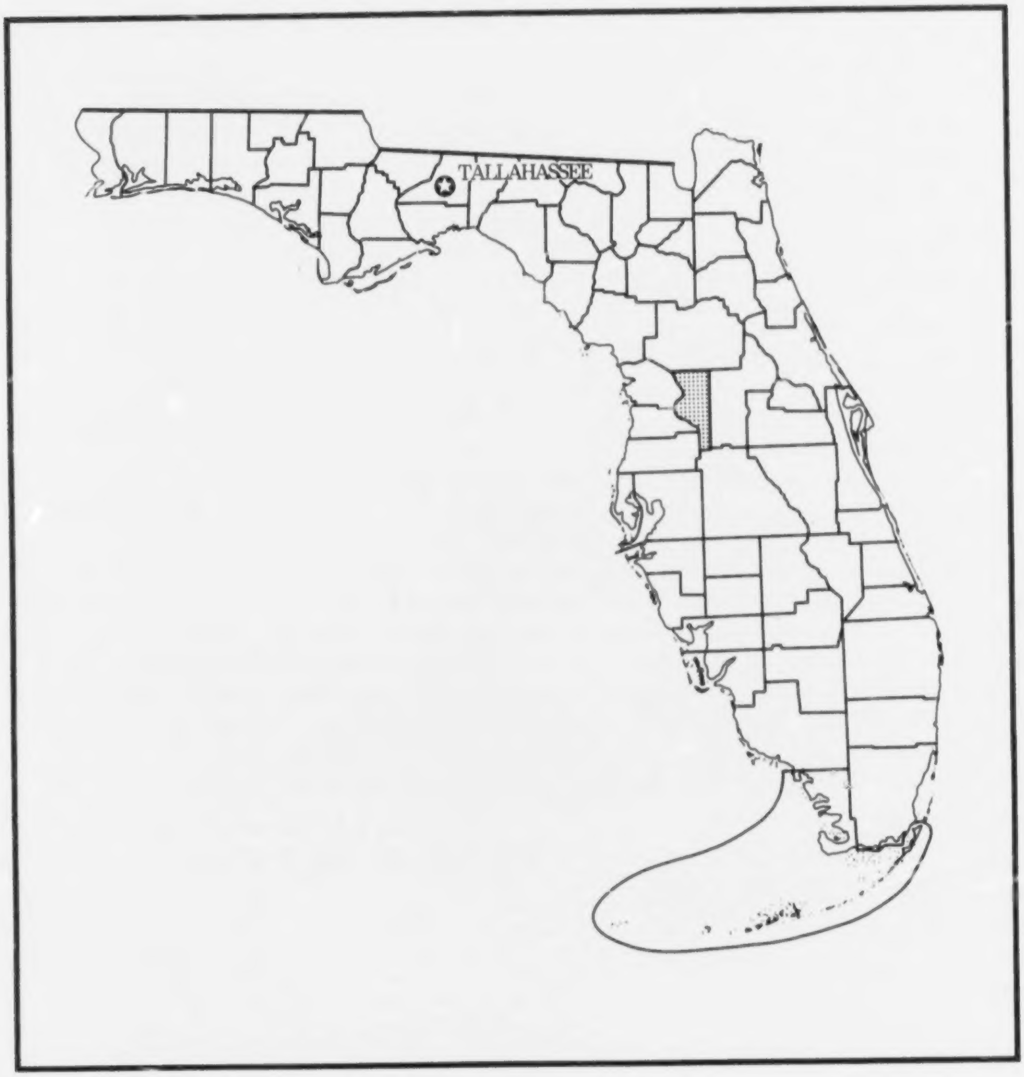
This soil survey contains information that can be used in land-planning programs in Sumter County, Florida. It contains predictions of soil behavior for selected land uses. The survey also highlights limitations and hazards inherent in the soil, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

This soil survey is designed for many different users. Farmers, ranchers, foresters, and agronomists can use it to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the survey to plan land use, select sites for construction, and identify special practices needed to insure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the survey to help them understand, protect, and enhance the environment.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. Broad areas of soils are shown on the general soil map. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described. Information on specific uses is given for each soil. Help in using this publication and additional information are available at the local office of the Soil Conservation Service or the Cooperative Extension Service.

James W. Mitchell
State Conservationist
Soil Conservation Service


TALLAHASSEE

Location of Sumter County in Florida.

Soil Survey of
Sumter County, Florida

By Howard Yamataki, Alfred O. Jones, Darrell E. Leach,
William E. Puckett, and Kevin J. Sullivan, Soil Conservation Service

Participating in the fieldwork were Scott W. Anderson, Berry B. Matheson,
and Gerald W. McCormick, Soil Conservation Service

United States Department of Agriculture, Soil Conservation Service
In cooperation with
University of Florida, Institute of Food and Agricultural Sciences,
Agricultural Experiment Stations and Soil Science Department,
Florida Department of Transportation,
and the Florida Department of Agriculture and Consumer Services

SUMTER COUNTY is in the central part of the Florida peninsula. It is bordered on the north by Marion County, on the east by Lake County, on the south by Polk County, and on the west by Pasco, Hernando, and Citrus Counties.

The survey area includes about 359,175 acres or about 561 square miles. The county is about 44 miles long from north to south in the eastern part of Sumter County and about 28 miles long in the western part. It is about 21 miles wide at the widest point and 6 miles wide in the southern one-third of the county.

Agriculture is the main enterprise in the county. Nonagricultural industries include light manufacturing plants, building supply companies, a railroad transport system, and several trade and service enterprises. In the area are a few mines where rock is being excavated to be used in roadbeds.

General Nature of the County

This section gives general information about the environmental and cultural factors that affect the use and management of soils in Sumter County. These factors are climate; history and development; water resources; farming; transportation; recreation; and physiography, stratigraphy, and economic geology.

Climate

The climate of Sumter County is characterized by long, warm, and relatively humid summers and mild, dry winters. In an average year, about 56 percent of the total annual precipitation falls from June through September. The other 44 percent is more or less evenly distributed throughout the rest of the year. Summarized climatic data *(4, 15)* based on records collected at a weather station east of Bushnell are shown in table 1.

Most summer precipitation is from afternoon or early evening local thundershowers. From June through September, measurable rain can be expected on about 80 of the days in this period. Summer showers are sometimes heavy with 2 or 3 inches of rain falling in an hour or two. Daylong rains in summer are rare and are generally associated with a tropical storm. Winter and spring rains are generally associated with large-scale continental weather developments and are of longer duration. Some last for 24 hours or longer. The long duration rains are generally not as intense as the thundershowers but occasionally release relatively large amounts of precipitation over large areas.

Extended periods of dry weather or droughts can occur in any season, but they are most common in the spring and the fall. By definition, a drought occurs when the soil does not have enough available water capacity for plants to maintain normal growth. Consequently, during some periods in a normal year, rain does not supply as much water as is needed by most crops. Droughts or dry periods in April and May, although generally of shorter duration than those in the fall, tend to be intensified by higher temperatures.

During the summer months, the average day to day temperature is fairly uniform. Afternoon temperatures regularly reach 90 degrees F, or higher, and at night the temperatures may fall to as low as 70 degrees.

Temperatures in winter vary considerably from day-to-day as periodic cold fronts move southward across the state. Temperatures may vary from the 70's during midday to an early morning low in the high 30's. Frost or freezing temperatures in the colder sections of the county occur at least once every winter on an average of 4 times a year. Temperatures as low as 20 degrees are rare. Freeze data shown in table 2 were taken at a weather station 2 miles east of Bushnell.

History and Development

Broward Miller, past president of the Sumter County Historical Society, prepared this section.

Sumter County was established by an act of the legislature on January 8, 1853. It was formed from a large area of southern Marion County and a segment of what is now Lake County.

Many of the early settlers of the area that was to become Sumter County had migrated from South Carolina. It was only natural that the new county was named in honor of General Charles Sumter, one of the partisan leaders" of the American Revolution.

The first federal census, which was taken after the establishment of Sumter County, showed a population of 1,549. Most of the early settlers in the county had secured land grants under the provisions of the Armed Occupation Act of 1842. This act had been created to encourage settlers to move into the area that was recently vacated by the Seminole Indians at the close of the Second Seminole Indian War.

The Armed Occupation Act of 1842 designated Adamsville to be the county seat. In 1858, the county commissioners moved the county seat to Sumterville. In 1860, the State legislature directed that the seat of county government be moved to Leesburg. It remained there until 1881 when an election was held and Sumterville was designated as the county seat. On January 1, 1909, the courthouse burned and immediately a movement developed to move the seat of government to another community in the county. A number of elections were held, and finally, it was decided to locate the courthouse in Bushnell.

Most of the farmers in the new county were engaged in the cultivation of staple crops, such as corn, peanuts, sugar cane, and sweet potatoes. A few of the large landowners planted cotton, and a few were recorded as tobacco growers. Cattle and hogs roamed the open range until 1947, when the No-Fence Law was enacted.

Another agricultural pursuit, prior to the creation of Sumter County, was the planting of citrus groves. Many of the groves were planted around Lake Panasoffkee and along the shores of the Withlacoochee River. When the citrus industry was evolving, the fruit was picked and transported to Panasoffkee, where it was packaged and shipped to northern markets. Severe freezes in the 1880's and 1890's practically wiped out the citrus industry. A Florida directory, published in 1886, listed the names of more than 100 orange growers in the area that is now Sumter County.

About the beginning of the 20th century, farmers began to plant vegetables on a large scale. For many years, Coleman was recognized as the cabbage center of the United States, and Center Hill was known as the string bean capital. Bushnell and Webster were known for their large production of tomatoes and cucumbers and Wildwood and Oxford were known for their production of watermelons.

Cattle raising is now the principal agricultural activity of Sumter County; although a large amount of vegetables is still produced. Citrus production is very limited. The trend in Sumter County economy is difficult to define at this time, but it is expected that cattle raising will continue to be an important factor in the agricultural field, that the production of fresh vegetables will decline, and that the retiree population will continue to increase.

Water Resources

The major rivers in Sumter County are the Withlacoochee and Little Withlacoochee. These rivers serve as the county line for Sumter County and Citrus and Hernando Counties on the west and Polk County on the south. The Dead River, Outlet River, and Jumper Creek are major waterways that discharge water into the Withlacoochee River. These waterways are fed by small lakes, four major watersheds, and artesian springs from the aquifer.

Lake Panasoffkee is the largest lake in the county. It covers approximately 4,500 acres. Deaton, Big Grant, Little Grant, Minoa, and Okeehumpka Lakes cover less than 1,000 acres. The four watersheds are the Big Four, Big Prairie, Jumper Creek, and South Sumter.

Water for towns, communities, and individual homes in the county is supplied by wells.

Farming

Farming has always been important to the economy of Sumter County. Farming is diversified mainly because of the variety of suitable soils. Although the land use patterns are changing, farmers have been able to increase yields by improved management and by slightly increasing the farmed acreage.

Crops commonly grown are watermelons, tomatoes, cucumbers, bell peppers, and squash. These crops are sent to the local packinghouses located in Bushnell, Center Hill, Oxford, and Webster. Sorghum grain, bahiagrass, and coastal bermudagrass are used for improved pasture, for temporary grazing, or for hay and silage. Beef production is the leading income producer. Most beef is sold through the livestock auction in Webster. Also several poultry producing facilities add to the economy of the county.

Recreation

Public recreation activities available in Sumter County are generally related to picnic areas. Several State and county parks are located throughout the county for picnics and other recreational activities. Most privately-owned recreational facilities are located near the Withlacoochee River, Lake Panasoffkee, and other small lakes in the area.

The State forest in the southern and southeastern part of the county offers camp sites, day use areas, and hunting. Golf is available in the Wildwood area.

Geology

Kenneth M. Cambell, Florida Geological Survey, Bureau of Geology, Department of Natural Resources, Tallahassee, Florida, prepared this section.

Physiography

This discussion of the physiography of Sumter County is based on William A. White's classification of the physiography of the Florida peninsula *(19)*.

Most of Sumter County lies within the Western Valley and Tsala Apopka Plain. Other major physiographic features of Sumter County include Brooksville Ridge and the Sumter and Lake Uplands.

Western Valley

The Western Valley is a large irregularly shaped low area that is bounded on the west by the Brooksville Ridge and on the east by the Sumter and Lake Uplands. The Western Valley is connected to the Central Valley by the Lake Harris Cross Valley. The Lake Harris Cross Valley is an east-west trending gap separating the Sumter and Lake Uplands. Elevation ranges from about 40 to 100 feet in the Western Valley.

Tsala Apopka Plain

The boundaries of the Tsala Apopka Plain are the Brooksville Ridge on the west and the Withlacoochee River on the east. The plain forms the lowest and flattest part of the Western Valley *(19)*. Tsala Apopka Lake occupies the northern part of the plain. Elevation ranges from about 40 feet (Tsala Apopka Lake) to about 75 feet. Tsala Apopka Lake is thought to be a relict of a much larger lake which occupied most of the Tsala Apopka Plain *(18)*.

Brooksville Ridge

The Brooksville Ridge forms the western boundary of the Western Valley. The ridge is only in a small part of west-central Sumter County in the vicinity of Nobleton. The Brooksville Ridge trends north to south. Elevation ranges from 70 to 200 feet. The southern part of the ridge crosses central Citrus, Hernando, and Pasco Counties to the west of Sumter County.

The Brooksville Ridge is composed of a core of limestone that is overlain by clayey sand, sandy clay, and clay, which in turn are overlain by Pleistocene sand. The clay and clayey sediments have limited downward percolation of ground water, which limits the amount of dissolution of the limestone core of the ridge. As a result, the Brooksville Ridge stands high in relation to the Western Valley and the Tsala Apopka Plain.

Sumter and Lake Uplands

The Sumter and Lake Uplands occupy the northeastern corner of the county and form part of the eastern boundary. These uplands are separated by the Lake Harris Cross Valley. In general, the elevation decreases in a northerly direction. Within Sumter County, the elevation of the uplands ranges from about 50 to 100 feet in the northern part and from about 75 to 140 feet in the southern part.

The Sumter and Lake Uplands are similar to the Brooksville Ridge in composition. These uplands also are made up of a limestone core overlain by clayey sediment which in turn is overlain by Pleistocene sand. Dissolution of limestone has been limited by the clayey sediment and has resulted in the relatively high elevation of the Sumter and Lake Uplands.

Stratigraphy

The surface sediment and near surface sediment in Sumter County consist of quartz sand, clay, peat, limestone, and dolomite. The sediments discussed below range from Middle Eocene age (40 to 45 million years ago) to Holocene age (10,000 years ago to present) (see figs. 1, 2, and 3).

Eocene Series

Avon Park Limestone

Avon Park Limestone is of Middle Eocene age and is the oldest formation to crop out in Florida. The Avon Park Limestone is present in the subsurface throughout Sumter County but is not exposed in the county.

In Sumter County, the Avon Park Limestone may be limestone or dolomite. Generally, the uppermost 30 to 70 feet of the formation consists of limestone that is

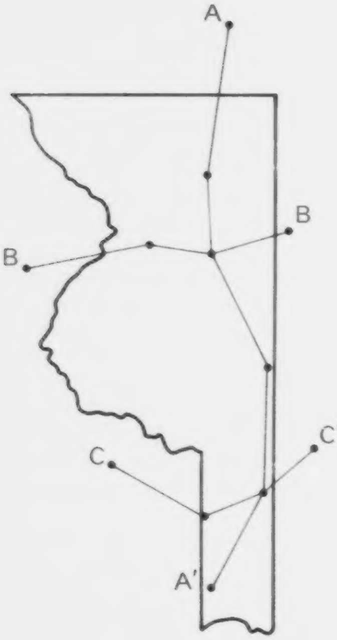


Figure 1.—Geological cross sections A-A', B-B', and C-C' in Sumter County.

underlain predominantly by dolomite or dolomitic limestone. Typically, Avon Park Limestone is white, cream, or brown, weakly to strongly indurated, calcilutite (clay and silt size) to very fine grained. The limestone may be thin bedded to relatively structureless and commonly contains flecks and thin seams of organic material. Where the formation is dolomitized, it is microcrystalline to fine grained, unconsolidated to strongly indurated, euhedral to subhedral dolomite crystals.

The Avon Park Limestone unconformably underlies the Ocala Group throughout the county with the possible exception of two small areas. R. O. Vernon *(17)* mapped two areas: one north of Center Hill and the other southeast of Webster, where the Ocala Group has been removed. Supporting data, however, is limited, and the configuration of these areas is unknown. In these areas, the Avon Park Limestone is overlain unconformably by Miocene age to Holocene age clastic sediment.

Characteristic fossil groups in the Avon Park Limestone include echinoids, foraminifera, bryozoa, molluscs, and corals. These groups are indications of a shallow, marine depositional environment.

Ocala Group

The Ocala Group consists of three formations, which in ascending order are the Inglis, Williston, and Crystal River Formations. For the purposes of this survey, the Inglis and Williston Formations are not differentiated. These two formations are discussed as the lower Ocala Group. Essentially, all of Sumter County is underlain by limestone of the Ocala Group.

Lower Ocala Group

The lower Ocala Group in Sumter County is a white to cream or tan, granular and variably chalky or recrystallized limestone. Where not extensively recrystallized, the lower Ocala Group is weakly to strongly indurated calcarenite composed mostly of

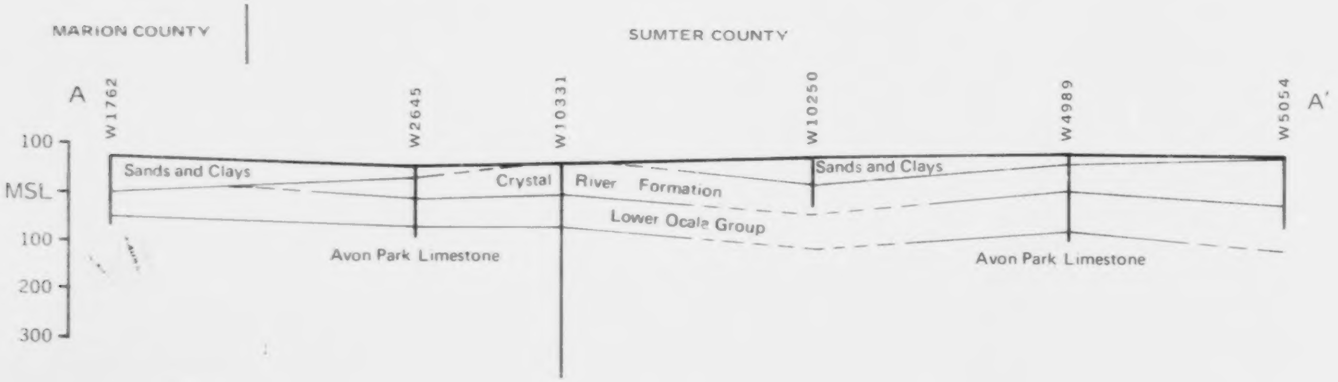
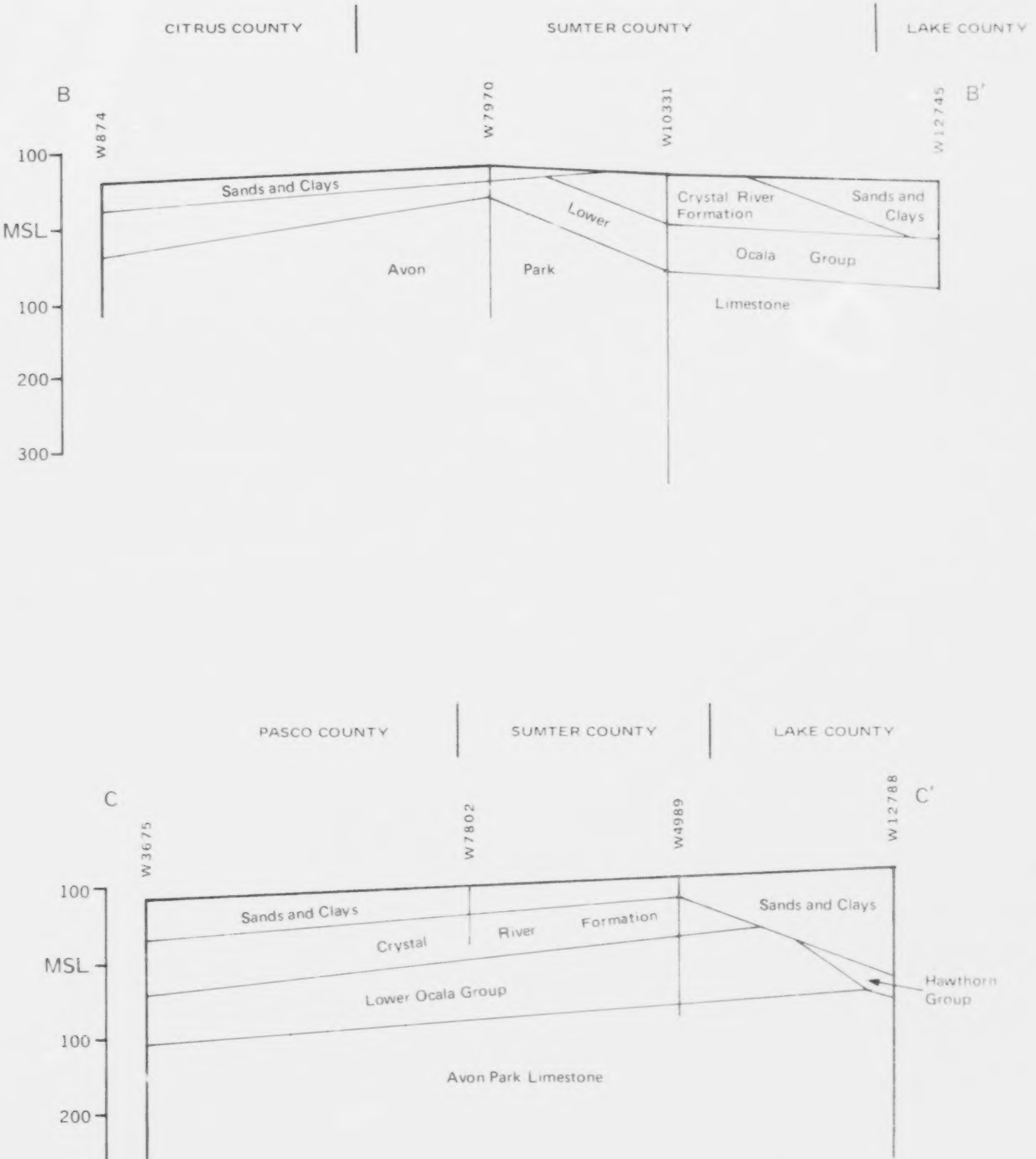


Figure 2.—Geological cross section A-A' shows stratigraphy in Sumter County. Vertical numbers preceded by a w" are well numbers.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Lower
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Ocala Group
Avon
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Limestone
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100
MSL
100
200
300
Sands and Clays
Sands and Clays
Crystal River Formation
Lower Ocala Group
Hawthorn Group
Avon Park Limestone

Figure 3.—Geological cross sections B-B' and C-C' shows stratigraphy in Sumter County and adjacent counties. Vertical numbers preceded by a "w" are well numbers.

miliolid foraminifera. Cement may be calcite or dolomite. The lower part is commonly dolomitized. Dolomitic sections consist of weakly indurated to strongly indurated, microcrystalline (silt size) to very fine grained, euhedral dolomite crystals.

The lower Ocala Group is abundantly fossiliferous, commonly forming a foraminiferal coquina. The most common fossils include miliolid foraminifera, other foraminifera, molluscs, and echinoids.

Limestone of the lower Ocala Group forms the bedrock in the Tsala Apopka Plain in the northern and western parts of Sumter County. The lower Ocala Group unconformably overlies the middle Eocene age Avon Park Limestone and conformably underlies the Crystal River Formation where that formation has not been removed by erosion. The boundary between the Crystal River Formation and the lower Ocala Group is transitional. Where the Crystal River Formation has been removed by erosion, the lower Ocala Group is overlain by Miocene age to Holocene age clastic sediment.

Crystal River Formation

The general lithology of the Crystal River Formation is described by R. O. Vernon *(17)* as a white or cream, soft, very massive, friable coquina of large foraminifera set in a pasty calcite (calcilutite) matrix. In the southern part of Sumter County, the calcilutite matrix is predominant.

The Crystal River Formation is abundantly fossiliferous, commonly forming a coquina of large foraminifera. The most common fossil types include foraminifera (large and small) echinoids, molluscs, bryozoa, and oysters.

The Crystal River Formation is conformably and gradationally underlain by the lower Ocala Group. In Sumter County, the Crystal River Formation is unconformably overlain by Miocene age to Holocene age clastic sediment. The Crystal River Formation forms most of the bedrock in Sumter County.

Miocene to Holocene Series

Undifferentiated Surficial Sands and Clays

The surficial sediment throughout most of Sumter County consists of quartz sand, clayey sand, and clay. The sediment ranges in thickness from a few feet to almost 100 feet.

The Oligocene age (23.7-35.6 million years ago) Suwannee Limestone, which overlies the Ocala Group throughout much of peninsular Florida, is not present in Sumter County. If the formation was originally deposited in the area, it has since been removed by erosion. The Miocene age Hawthorn Group sediments have also been removed by erosion. Some of the undifferentiated sediments that consist of quartz sand and clay are phosphatic and are considered to be residual material of the Hawthorn Group. Some authors have assigned these materials to either the Hawthorn or Alachua Formations *(8, 17)*.

The general lithology of the undifferentiated surficial sediments varies from fine to coarse grained sand to clayey sand, sandy clay, and clay. The content of clay generally increases with depth. Limestone and phosphatic limestone fragments are common in the lower part. Peat or organic rich sediment is on the surface layer in some parts of the county.

Economic Geology

Stone

Crushed limestone is the major mineral commodity produced in Sumter County. Several companies are mining predominantly from the Late Eocene age Crystal River Formation. The quarries are located in the central part of the county.

All limestone is mined from open-pit quarries. Generally, overburden must be removed by bulldozers prior to mining. In some areas, the limestone is soft enough that bulldozers equipped with a claw can rip the rock loose. Drilling and blasting are necessary to fracture the harder rock. If mining extends below the water table and the pits remain flooded, draglines are needed to mine the limestone. The mined material is transported by truck to processing plants to be crushed and stockpiled. The main products produced are dense road base material and agricultural lime.

Peat

Two companies are currently mining peat from Holocene age deposits in Sumter County. These deposits are located east of Oxford near the Lake County boundary and near the Withlacoochee River, southwest of Tarrytown.

Mining is accomplished by clearing the surface of vegetation, pumping to dewater the peat, then excavating the peat with a dragline. The peat is then shredded and stockpiled to dry. All of the peat produced is used in landscaping or as potting soil or for other horticultural purposes. Some of the peat is suitable for energy applications.

How This Survey Was Made

This survey was made to provide information about the soils in the survey area. The information includes a description of the soils and their location and a discussion of the suitability, limitations, and management of the soils for specified uses. Soil scientists observed the steepness, length, and shape of slopes; the general pattern of drainage; the kinds of crops and native plants growing on the soils; and the kinds of bedrock. They dug many holes to study the soil profile, which is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material from which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

The soils in the survey area occur in an orderly pattern that is related to the geology, the landforms, relief, climate, and the natural vegetation of the area. Each kind of soil is associated with a particular kind of landscape or with a segment of the landscape. By observing the soils in the survey area and relating their position to specific segments of the landscape, a soil scientist develops a concept, or model, of how the soils were formed. Thus, during mapping, this model enables the soil scientist to predict with considerable accuracy the kind of soil at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, acidity, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. The system of taxonomic classification used in the United States is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area are generally collected for laboratory analyses and for engineering tests. Soil scientists interpreted the data from these analyses and tests as well as the field-observed characteristics and the soil properties in terms of expected behavior of the soils under different uses. Interpretations for all of the soils were field tested through observation of the soils in different uses under different levels of management. Some interpretations are modified to fit local conditions, and new interpretations sometimes are developed to meet local needs. Data were assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management were assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can state with a fairly high degree of probability that a given soil will have a high water table within certain depths in most years, but they cannot assure that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Map Unit Composition

A map unit delineation on a soil map represents an area dominated by one major kind of soil or an area dominated by several kinds of soil. A map unit is identified and named according to the taxonomic classification of the dominant soil or soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural objects. In common with other natural objects, they have a characteristic variability in their properties. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of soils of other taxonomic classes. Consequently, every map unit is made up of the soil or soils for which it is named and some soils that belong to other taxonomic classes. In the detailed soil map units, these latter soils are called inclusions or included soils. In the general soil map units, they are called soils of minor extent.

Most inclusions have properties and behavioral patterns similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting (similar) inclusions. They may or may not be mentioned in the map unit descriptions. Other inclusions, however, have properties and behavior divergent enough to affect use or require different management. These are contrasting (dissimilar) inclusions. They generally occupy small areas and cannot be shown separately on the soil maps because of the scale used in mapping. The inclusions of contrasting soils are mentioned in the map unit descriptions. A few inclusions may not have been observed, and consequently are not mentioned in the descriptions, especially where the soil pattern was so complex that it was impractical to make enough observations to identify all of the kinds of soils on the landscape.

The presence of inclusions in a map unit in no way diminishes the usefulness or accuracy of the soil data. The objective of soil mapping is not to delineate pure taxonomic classes of soils but rather to separate the landscape into segments that have similar use and management requirements. The delineation of such landscape segments on the map provides sufficient information for the development of resource plans, but onsite investigation is needed to plan for intensive uses in small areas.

General Soil Map Units

The general soil map at the back of this publication shows broad areas that have a distinctive pattern of soils, relief, and drainage. Each map unit on the general soil map is a unique natural landscape. Typically, a map unit consists of one or more major soils and some minor soils. It is named for the major soils. The soils making up one unit can occur in other units but in a different pattern.

The general soil map can be used to compare the suitability of large areas for general land uses. Areas of suitable soils can be identified on the map. Likewise, areas where the soils are not suitable can be identified.

Because of its small scale, the map is not suitable for planning the management of a farm or field or for selecting a site for a road or a building or other structure. The soils in any one map unit differ from place to place in slope, depth, drainage, and other characteristics that affect management.

Sandy Soils of the Upland Ridges

The five general soil map units in this group consist of nearly level to moderately steep, excessively drained to somewhat poorly drained soils. Most of these soils are sandy throughout, and some have a clayey subsoil. The soils in these map units are mainly in the east-central and northern part of Sumter County. They make up about 32 percent of the survey area.

1. Astatula

Nearly level to strongly sloping, excessively drained soils that are sandy to a depth of more than 80 inches

The soils in this map unit are on gently undulating to rolling sandhills and ridges. The slopes range from 0 to 15 percent. Most of these soils are in the northern part of Sumter County. The native vegetation is sand pine, bluejack oak, turkey oak, and scrub oak. The understory is rosemary, running oak, and scattered saw palmetto.

This map unit makes up about 1 percent, or 5,232 acres, of Sumter County. It is about 90 percent Astatula soils and 10 percent soils of minor extent.

Typically, the surface layer of the Astatula soils is dark gray fine sand about 3 inches thick. The upper part of the underlying material, to a depth of about 40 inches, is pale brown and light yellowish brown fine sand. The lower part is very pale brown fine sand to a depth of 80 inches or more.

The soils of minor extent in this map unit include Candler, Lake, and Tavares soils.

Most of the acreage in this map unit is in native vegetation. The rest is mostly in improved pasture.

2. Candler-Millhopper-Apopka

Nearly level to strongly sloping, excessively drained to moderately well drained, sandy soils; most are sandy throughout, and some have a loamy subsoil at a depth of more than 40 inches

The soils in this map unit are on knolls and broad ridges on the uplands. The slopes range from 0 to 12 percent. Most of these soils are in the north-central to northeastern part of Sumter County. Small areas of soils in this map unit are in the western part of the county that is adjacent to Hernando County. The native vegetation is mostly longleaf pine, sand pine, turkey oak, and scrub oak. The understory is running oak, saw palmetto, and various grasses.

This map unit makes up about 12 percent, or 43,438 acres, of Sumter County. It is about 55 percent Candler soils, 11 percent Millhopper soils, 7 percent Apopka soils, and 27 percent soils of minor extent.

Candler soils are excessively drained. Typically, the surface layer is dark grayish brown sand about 8 inches thick. The subsurface layer, to a depth of about 50 inches, is light yellowish brown and yellowish brown sand. The subsoil to a depth of about 80 inches is yellow sand that has strong brown lamellae.

Apopka soils are well drained. Typically, the surface layer is grayish brown fine sand about 8 inches thick. The subsurface layer, to a depth of about 47 inches, is pale brown to very pale brown fine sand. The subsoil to a depth of about 80 inches is strong brown and reddish yellow fine sandy loam.

Millhopper soils are moderately well drained. Typically, the surface layer is dark grayish brown sand about 5 inches thick. The subsurface layer, to a depth of about 50 inches, is light yellowish brown, very pale brown, and brownish yellow fine sand. The subsoil to a depth of about 80 inches or more is brownish yellow and light gray sandy clay loam.

The soils of minor extent in this map unit include Arredondo, Astatula, Kendrick, Lake, Sparr, and Tavares soils.

Most of the acreage in this map unit is used as improved pasture. A few small areas remain in native vegetation.

3. Lake-Arredondo-Millhopper

Nearly level to gently sloping, excessively drained to moderately well drained, sandy soils; some are sandy throughout, and some have a loamy subsoil at a depth of more than 40 inches

The soils in this map unit are on low ridges on the uplands. The slopes mainly range from 0 to 5 percent. Most of these soils are in the extreme northern part of Sumter County. Small areas of soils in this map unit are in the western part of the county that is adjacent to Hernando County. The native vegetation is live oak, turkey oak, and laurel oak. The understory is greenbrier, saw palmetto, and grapevines.

This map unit makes up about 2 percent, or 7,680 acres, of Sumter County. It is about 40 percent Lake soils, 30 percent Arredondo soils, 20 percent Millhopper soils, and 10 percent soils of minor extent.

Lake soils are excessively drained. Typically, the surface layer is very dark grayish brown fine sand about 9 inches thick. The upper part of the underlying material, to a depth of about 63 inches, is brown, yellowish brown, and strong brown fine sand. The lower part to a depth of 80 inches or more is brownish yellow fine sand.

Arredondo soils are well drained. Typically, the surface layer is very dark grayish brown fine sand about 9 inches thick. The subsurface layer, to a depth of about 57 inches, is yellowish brown, brownish yellow, and strong brown fine sand and loamy fine sand. The subsoil is yellowish brown and brown fine sandy loam and sandy clay loam.

Millhopper soils are moderately well drained. Typically, the surface layer is dark grayish brown sand about 5 inches thick. The subsurface layer, to a depth of about 50 inches, is light yellowish brown, very pale brown, and brownish yellow fine sand. The subsoil to a depth of about 80 inches or more is brownish yellow and light gray sandy clay loam.

The soils of minor extent in this map unit include Candler, Kendrick, Sparr, and Tavares soils.

Most of the acreage in this map unit is used as improved pasture or as cropland.

4. Tavares-Adamsville

Nearly level to gently sloping, moderately well drained and somewhat poorly drained soils that are sandy to a depth of more than 80 inches

The soils in this map unit are on low knolls, ridges, and in nearly level areas on the uplands. The slopes range from 0 to 5 percent. Most of these soils are in the central part of Sumter County. The native vegetation is mostly longleaf pine, live oak, laurel oak, turkey oak, and sweetgum. The understory is running oak, saw palmetto, and various grasses.

This map unit makes up about 6 percent, or 20,640 acres, of Sumter County. It is about 47 percent Tavares soils, 29 percent Adamsville soils, and 24 percent soils of minor extent.

Tavares soils are moderately well drained. Typically, the surface layer is very dark grayish brown fine sand about 8 inches thick. The underlying material, to a depth of about 68 inches, is grayish brown, pale brown, and very pale brown fine sand and is white fine sand to a depth of 80 inches or more.

Adamsville soils are somewhat poorly drained. Typically, the surface layer is gray fine sand about 5 inches thick. The upper part of the underlying material, to a depth of about 29 inches, is brown, light yellowish brown, and very pale brown fine sand. The lower part to a depth of about 80 inches or more is white fine sand.

The soils of minor extent in this map unit include Basinger, Immokalee, Lake, Myakka, Placid, and Pompano soils.

Most of the acreage in this map unit is used as improved pasture. A few areas remain in native vegetation.

5. Sparr-Millhopper-Sumterville

Nearly level to gently sloping, somewhat poorly drained and moderately well drained, sandy soils; most have a loamy subsoil at a depth of more than 40 inches, and some have a clayey subsoil at a depth of 20 to 40 inches

The soils in this map unit are on low knolls and ridges on the uplands. The slopes range from 0 to 5 percent. Most of these soils are in the northern part of Sumter County. The native vegetation is mostly live oak, water oak, and turkey oak. The understory is pineland threeawn, saw palmetto, and greenbrier.

This map unit makes up about 11 percent, or 40,930 acres, of Sumter County. It is about 37 percent Sparr soils, 18 percent Millhopper soils, 9 percent Sumterville soils, and 36 percent soils of minor extent.

Sparr soils are somewhat poorly drained. Typically, the surface layer is gray fine sand about 9 inches thick. The subsurface layer, to a depth of about 45 inches, is gray, pale brown, and very pale brown fine sand. The upper part of the subsoil, to a depth of about 51 inches, is light gray sandy clay loam. The middle part, to a depth of 71 inches, is light gray sandy clay loam. The lower part to a depth of about 80 inches is light gray sandy clay loam.

Millhopper soils are moderately well drained. Typically, the surface layer is dark grayish brown sand about 5 inches thick. The subsurface layer, to a depth of about 50 inches, is light yellowish brown, very pale brown, and brownish yellow fine sand. The subsoil, to a depth of 80 inches or more, is sandy clay loam. The upper 6 inches of the subsoil is brownish yellow, and the lower 24 inches is light gray.

Sumterville soils are somewhat poorly drained. Typically, the surface layer is dark gray fine sand about 9 inches thick. The subsurface layer, to a depth of about 29 inches, is light yellowish brown and very pale brown fine sand. The subsoil to a depth of about 80 inches is light gray sandy clay.

The soils of minor extent in this map unit include Arredondo, EauGallie, Tavares, and Vero soils.

Most of the acreage in this map unit is used as improved pasture. Some areas are used for cultivated crops or as woodland.

Sandy Soils of the Low Ridges

The three general soil map units in this group consist of nearly level to gently sloping, somewhat poorly drained to poorly drained soils. Most of these soils have a clayey or loamy subsoil, and some are sandy throughout. The soils in these map units are in the central part of Sumter County. They make up about 23 percent of the survey area.

6. Paisley-Ft. Green-Vero

Nearly level to gently sloping, poorly drained, sandy soils; some have a clayey or loamy subsoil, and some are sandy and dark in the upper part of the subsoil and loamy and clayey in the lower part

The soils in this map unit are on the flatwoods and on broad ridges, low flats, and small knolls. The slopes range from 0 to 3 percent. Most of these soils are north of Lake Panasoffkee, along the Outlet River, south of Center Hill, and north of the Polk County line. The native vegetation is scattered slash pine and longleaf pine, live oak, hickory, palms, and sweetgum. The understory is saw palmetto, inkberry, pineland threeawn, gallberry, waxmyrtle, panicums, and grapevines.

This map unit makes up about 13 percent, or 45,898 acres, of Sumter County. It is about 40 percent Paisley soils, 25 percent Ft. Green soils, 20 percent Vero soils, and 15 percent soils of minor extent.

Paisley soils are poorly drained. Typically, the surface layer is very dark grayish brown fine sand about 5 inches thick. The subsurface layer, to a depth of about 16 inches, is light brownish gray fine sand. The upper part of the subsoil, to a depth of about 25 inches, is gray sandy clay; the middle part, to a depth of about 45 inches, is gray clay; and the lower part, to a depth of about 68 inches, is light gray sandy clay. The substratum to a depth of 80 inches or more is light gray sandy clay.

Ft. Green soils are poorly drained. Typically, the surface layer is dark grayish brown fine sand about 6 inches thick. The subsurface layer, to a depth of about 28 inches, is grayish brown and light gray fine sand. The upper part of the subsoil, to a depth of about 58 inches, is gray and dark gray sandy clay loam. The lower part to a depth of about 80 inches is gray cobbly sandy clay loam.

Vero soils are poorly drained. Typically, the surface layer is black and dark gray fine sand about 7 inches thick. The subsurface layer, to a depth of about 13 inches, is light brownish gray fine sand. The upper part of the subsoil, to a depth of 21 inches, is dark brown fine sand. The middle part, to a depth of about 30 inches, is grayish brown fine sandy loam. The lower part, to a depth of about 60 inches, is gray and light gray sandy clay. The substratum to a depth of about 80 inches is light gray sandy clay loam.

The soils of minor extent in this map unit include Chobee, EauGallie, Floridana, Gator, Mabel, and Nittaw soils.

Most of the acreage in this map unit is in native vegetation. Some areas are used as improved pasture and as rangeland.

7. Sparr-Seffner-Ona

Nearly level to gently sloping, somewhat poorly drained to poorly drained, sandy soils; some have a loamy subsoil at a depth of more than 40 inches, some are sandy throughout, and some have a sandy, dark subsoil within a depth of 20 inches.

The soils in this map unit are on low, broad ridges, knolls, and flatwoods. The slopes range from 0 to 5 percent. These soils are in the south-central part of Sumter County, north of the Little Withlacoochee River. The native vegetation on the oak hammocks is live oak, water oak, greenbrier, forbs, and scattered saw palmetto. The vegetation on the flatwoods includes slash pine, live oak, and palmettos.

This map unit makes up about 8 percent, or 28,605 acres, of Sumter County. It is about 28 percent Sparr soils, 25 percent Seffner soils, 22 percent Ona soils, and 25 percent soils of minor extent.

Sparr soils are somewhat poorly drained. Typically, the surface layer is gray fine sand about 9 inches thick. The subsurface layer, to a depth of about 45 inches, is pale brown and very pale brown fine sand. The upper part of the subsoil, to a depth of about 51 inches, is mottled light gray fine sandy loam. The lower part to a depth of about 80 inches is mottled light gray sandy clay loam.

Seffner soils are somewhat poorly drained. Typically, the surface layer is dark brown sand about 12 inches thick. The upper part of the underlying material, to a depth of about 33 inches, is dark brown and brown fine sand. The middle part, to a depth of about 55 inches, is light gray fine sand that has mottles in shades of yellow. The lower part to a depth of 80 inches or more is white fine sand.

Ona soils are poorly drained. Typically, the surface layer is very dark gray fine sand about 9 inches thick. The upper part of the subsoil, to a depth of about 13 inches, is very dark gray fine sand that has sand grains well coated with organic matter. The lower part, to a depth of about 20 inches, is dark brown fine sand. The upper part of the substratum, to a depth of about 40 inches, is brown fine sand. The middle part, to a depth of about 55 inches, is light yellowish brown fine sand. The lower part to a depth of about 80 inches is brown and pale brown fine sand.

The soils of minor extent include Adamsville, EauGallie, Florahome, Ft. Green, Kanapaha, and Sumterville soils.

Most of the acreage in this map unit is used as pasture or cropland.

8. Sumterville-Mabel-Ft. Green

Nearly level to gently sloping, somewhat poorly drained and poorly drained, sandy soils; most have a clayey subsoil, and some have a loamy subsoil

The soils in this map unit are on broad ridges and knolls on the uplands and on small knolls on the flatwoods. The slopes range from 0 to 5 percent. Most of these soils are in the central part of Sumter County, south of County Road 470 and east of U.S. Interstate Highway 75. The native vegetation is scattered slash pine, loblolly pine, live oak, laurel oak, water oak, sweetgum, and cabbage palm. The understory is waxmyrtle, briers, saw palmetto, paspalums, panicums, and native grasses. The vegetation in the depressions include maidencane, pickerelweed, sawgrass, chalky bluestem, bluejoint panicum, and various other perennial grasses.

This map unit makes up about 2 percent, or 7,442 acres, of Sumter County. It is about 38 percent Sumterville soils, 25 percent Mabel soils, 11 percent Ft. Green soils, and 26 percent soils of minor extent.

Sumterville soils are somewhat poorly drained. Typically, the surface layer is dark gray fine sand about 9 inches thick. The subsurface layer, to a depth of about 29 inches, is light yellowish brown and very pale brown fine sand. The subsoil to a depth of about 80 inches is light gray sandy clay.

Mabel soils are somewhat poorly drained. Typically, the surface layer is dark gray fine sand about 6 inches thick. The subsurface layer, to a depth of about 16 inches, is light grayish brown and brownish gray fine sand. The subsoil, to a depth of about 30 inches, is yellowish brown sandy clay loam and clay. The substratum to a depth of 80 inches is light gray clay and clay loam.

Ft. Green soils are poorly drained. Typically, the surface layer is dark grayish brown fine sand about 6 inches thick. The subsurface layer, to a depth of about 28 inches, is grayish brown and light gray fine sand. The upper part of the subsoil, to a depth of about 58 inches, is gray and dark gray sandy clay loam. The lower part to a depth of about 80 inches is gray cobbly sandy clay loam.

The soils of minor extent include EauGallie, Floridana, Immokalee, Millhopper, Oldsmar, Paisley, and Sparr soils.

Most of the acreage in this map unit is used as pasture. Most of the remaining acreage is in native vegetation.

Sandy Soils of the Flatwoods and Depressions

The three general soil map units in this group consist of nearly level, poorly drained to very poorly drained soils. Most of these soils have a sandy, dark subsoil, some have a loamy subsoil, some do not have a subsoil, and some are sandy throughout. The soils in this group are throughout Sumter County but generally are in the western and southern parts. The largest areas of these soils are in the southern panhandle, in a band that extends north from the Little Withlacoochee River to west of Bushnell, and in an area northwest of Lake Panasoffkee that is parallel to the Withlacoochee River. These soils make up about 32 percent of the survey area.

9. EauGallie-Delray

Nearly level, poorly drained and very poorly drained, sandy soils; some have a sandy, dark subsoil within 30 inches of the surface; and all have a loamy subsoil at a depth of more than 40 inches

The soils in this map unit are on nearly level flatwoods and oak hammocks that are interspersed with depressions that are connected by narrow drainageways. The slopes range from 0 to 2 percent. The largest area of these soils is in the southern panhandle. Other areas are scattered around the southern part of the county. The native vegetation is slash pine, water oak, laurel oak, saw palmetto, and running oak and also cypress in depressional areas.

This map unit makes up about 19 percent, or 69,886 acres, of Sumter County. It is about 43 percent EauGallie soils, 14 percent Delray soils, and 43 percent soils of minor extent. Kanapaha soils make up a large part of the minor soils that are in an area between Florida Highway 50 and Sumter County Road 48.

EauGallie soils are poorly drained. Typically, the surface layer is black fine sand about 6 inches thick. The subsurface layer, to a depth of about 21 inches, is light gray and grayish brown fine sand. The upper part of the subsoil, to a depth of about 34 inches, is very dark brown and very dark grayish brown fine sand. The next layer, to a depth of about 50 inches, is grayish brown fine sand. The next layer, to a depth of about 53 inches, is light brownish gray fine sandy loam. The lower part of the subsoil, to a depth of about 65 inches, is light gray sandy clay loam. The substratum to a depth of about 80 inches or more is light gray fine sandy loam.

Delray soils are very poorly drained. Typically, the surface layer is black and very dark gray fine sand about

16 inches thick. The subsurface layer, to a depth of about 60 inches, is grayish brown fine sand. The subsoil to a depth of about 80 inches is light brownish gray sandy clay loam.

The soils of minor extent in this map unit include Chobee, Electra, Floridana, Ft. Green, Immokalee, Kanapaha, Mabel, Myakka, Okeelanta, Ona, Paisley, Sparr, Sumterville, and Vero soils.

Most of the acreage in this map unit is in native vegetation.

10. Myakka-Placid-Ona

Nearly level, poorly drained and very poorly drained, sandy soils; some have a sandy, dark subsoil, and some are sandy throughout and do not have a subsoil

The soils in this map unit are on the flatwoods, mainly in the east-central part of Sumter County that is adjacent to Lake County and west of Coleman. The slopes range from 0 to 2 percent. The native vegetation is longleaf pine, slash pine, gallberry, and saw palmetto and also cypress in depressional areas.

This map unit makes up 6 percent, or 21,778 acres, of Sumter County. It is about 30 percent Myakka soils, 28 percent Placid soils, 15 percent Ona soils, and 27 percent soils of minor extent.

Myakka soils are poorly drained. Typically, the surface layer is black sand about 6 inches thick. The subsurface layer, to a depth of about 25 inches, is gray sand and fine sand. The upper part of the subsoil, to a depth of about 31 inches, is black fine sand well coated with organic matter. The lower part, to a depth of about 40 inches, is dark brown fine sand. The substratum to a depth of 80 inches or more is light brownish yellow and light gray fine sand.

Placid soils are very poorly drained. Typically, the surface layer is black fine sand about 10 inches thick underlain by very dark gray fine sand to a depth of about 16 inches. The underlying material to a depth of about 80 inches is grayish brown and light gray fine sand.

Ona soils are poorly drained. Typically, the surface layer is about 9 inches thick. It is very dark gray fine sand that has many uncoated sand grains. The upper part of the subsoil, to a depth of about 13 inches, is very dark gray fine sand that has many sand grains well coated with organic matter. The lower part, to a depth of about 20 inches, is dark brown fine sand that has many sand grains well coated with organic matter. The substratum to a depth of about 80 inches is brown, light yellowish brown, and pale brown fine sand.

The soils of minor extent in this map unit include Adamsville, Basinger, EauGallie, and Pompano soils.

Most of the acreage in this map unit is used as rangeland or woodland.

11. Vero-Floridana-Oldsmar

Nearly level, poorly drained and very poorly drained, sandy soils; some are sandy and dark in the upper part of the subsoil and loamy or clayey in the lower part, and some have a loamy subsoil

The soils in this map unit are on the flatwoods, mainly in the northwestern part of Sumter County. The slopes range from 0 to 2 percent. The largest area of these soils extends from near the Lake Panasoffkee River outlet to the Marion County line. Another area is between Coleman and Wildwood. The native vegetation of the flatwoods is scattered longleaf pine and slash pine. The understory is saw palmetto, waxmyrtle, gallberry, and running oak. The vegetation in depressions and swamps ranges from dense stands of maidencane and pickerelweed to mixed stands of cypress, bay, and gum trees.

This map unit makes up about 7 percent, or 23,919 acres, of Sumter County. It is about 40 percent Vero soils, 35 percent Floridana soils, 11 percent Oldsmar soils, and 14 percent soils of minor extent.

Vero soils are poorly drained. Typically, the surface layer is black and dark gray fine sand about 7 inches thick. The subsurface layer, to a depth of about 13 inches, is light brownish gray fine sand. The upper part of the subsoil, to a depth of 21 inches, is dark brown fine sand and loamy fine sand. The middle part, to a depth of 30 inches, is grayish brown fine sandy loam that has mottles in shades of brown. The lower part, to a depth of 60 inches, is gray and light gray sandy clay that has mottles in shades of red and brown. The substratum to a depth of 80 inches or more is gray sandy clay loam.

Floridana soils are very poorly drained. Typically, the surface layer is black mucky fine sand about 4 inches thick. Beneath the muck is very dark gray fine sand to a depth of about 12 inches. The subsurface layer, to a depth of about 25 inches, is dark grayish brown and light brownish gray fine sand. The subsoil to a depth of 80 inches or more is light brownish gray and grayish brown sandy clay loam that has mottles in shades of brown and yellow.

Oldsmar soils are poorly drained. Typically, the surface layer is very dark gray fine sand and dark gray fine sand about 9 inches thick. The subsurface layer, to a depth of about 31 inches, is light brownish gray and light gray fine sand. The upper part of the subsoil, to a depth of about 38 inches, is black fine sand. The middle part, to a depth of 48 inches, is dark reddish brown fine sand. The lower part to a depth of 80 inches or more is light olive gray and greenish gray sandy clay loam that has mottles in shades of brown and olive.

The soils of minor extent in this map unit include small areas of Adamsville, Basinger, EauGallie, Ft. Green, Gator, Immokalee, Mabel, Malabar, Monteocha, Paisley, Pomello, Placid, and Sparr soils.

About one-half of the acreage in this map unit remains in native vegetation. Many areas of this soil are improved pasture. Slash pine trees have been planted in some areas.

Mucky and Sandy Soils of the Swamps, Marshes, and River Flood Plains

The three general soil map units in this group consist mostly of very poorly drained soils. Most of these soils are mucky, some have a clayey or loamy subsoil, and some are sandy and have a loamy or sandy subsoil. The soils in these map units are mainly along the Withlacoochee and Little Withlacoochee Rivers and in areas northeast of Lake Panasoffkee. They make up about 13 percent of the survey area.

12. Floridana-Basinger

Nearly level, very poorly drained and poorly drained, sandy soils; some have a loamy subsoil, and some have a sandy subsoil

The soils in this map unit are on the Little Withlacoochee River flood plain that is adjacent to Hernando County. These landscapes are long and narrow and are subject to frequent flooding. The slopes range from 0 to 2 percent. The native vegetation is mostly water oak, cypress, sweetgum, hickory, maidencane, buttonbush, smartweed, sedges, and other water-tolerant plants.

This map unit makes up about 1 percent, or 3,685 acres, of Sumter County. It is about 65 percent Floridana soils, 20 percent Basinger soils, and 15 percent soils of minor extent.

Floridana soils are very poorly drained. Typically, the surface layer is black mucky fine sand and very dark gray fine sand about 12 inches thick. The subsurface layer, to a depth of about 25 inches, is dark grayish brown and light brownish gray fine sand. The subsoil to a depth of about 80 inches is light brownish gray and grayish brown sandy clay loam.

Basinger soils are poorly drained. Typically, the surface layer is black fine sand about 8 inches thick. The subsurface layer, to a depth of about 27 inches, is light brownish gray and light gray fine sand. The subsoil, to a depth of about 45 inches, is dark brown fine sand. The substratum to a depth of 80 inches or more is grayish brown fine sand.

The soils of minor extent in this map unit include Chobee, Delray, Malabar, Pompano, and Okeelanta soils.

Most of the acreage in this map unit is in native vegetation. A few small areas are used as rangeland.

13. Gator-Okeelanta-Terra Ceia

Nearly level, very poorly drained, mucky soils; some are mucky to a depth of 52 inches or more, and some are mucky to a depth of 16 to 40 inches and are underlain by sandy or loamy material

The soils in this map unit are on landscapes that are adjacent to lakes, rivers, and streams and are in depressions on the flatwoods. The slopes range from 0 to 1 percent. Most of these soils are in the eastern part of Sumter County along Lake Panasoffkee, in the southern part along the Withlacoochee River and Jumper Creek, and they are also in the northwestern and northeastern parts. The native vegetation is cypress, hickory, redbay, and sweetgum. The understory is pickerelweed, willow, sawgrass, lilies, greenbrier, poison ivy, sedges, reeds, and other aquatic plants.

This map unit makes up about 10 percent, or 34,134 acres, of Sumter County. It is about 30 percent Gator soils, 30 percent Okeelanta soils, 15 percent Terra Ceia soils, and 25 percent soils of minor extent.

Gator soils are very poorly drained. Typically, the surface layer is very dark grayish brown and black muck about 25 inches thick. The upper part of the underlying material, to a depth of about 40 inches, is light gray fine sand. The lower part to a depth of about 80 inches is gray sandy clay loam and fine sandy loam.

Okeelanta soils are very poorly drained. Typically, the surface layer, to a depth of about 38 inches, is black and dark reddish brown organic material. The underlying material to a depth of about 80 inches is grayish brown and light gray fine sand.

Terra Ceia soils are very poorly drained. Typically, the surface layer is very dark gray muck about 10 inches thick. It is underlain by black muck to a depth of about 80 inches.

The soils of minor extent in this map unit include Floridana, Ft. Green, Mabel, Nittaw, Paisley, and Pompano soils.

Most of the acreage in this map unit is in native vegetation. These soils flood frequently. They provide good habitat for wildlife.

14. Nittaw-Chobee

Nearly level, very poorly drained, mucky and sandy soils that have a clayey or loamy subsoil

The soils in this map unit are in nearly level to depressional hardwood and cypress swamps. The slopes range from 0 to 1 percent. These soils are in areas that are adjacent to the Withlacoochee River between Silver Lake and Hog Island and along the Polk County line. Most of these soils are in the Devils Creek Swamp. The native vegetation is baldcypress, cabbage palms, sweetgum, and various hardwoods. The understory is water-tolerant plants, such as maidencane, sawgrass, swamp primrose, buttonbush, greenbrier, poison ivy, and sedges.

This map unit makes up about 2 percent, or 6,512 acres, of Sumter County. It is about 75 percent Nittaw soils, 15 percent Chobee soils, and 10 percent soils of minor extent.

Nittaw soils are very poorly drained. Typically, the surface layer is dark reddish brown muck about 5 inches thick and is underlain by 7 inches of very dark grayish brown fine sand. The subsoil, to a depth of about 65 inches, is very dark gray and gray sandy clay and clay.

The substratum to a depth of about 80 inches is light gray loamy fine sand.

Chobee soils are very poorly drained. Typically, the surface layer is black loamy fine sand about 6 inches thick. The subsoil, to a depth of about 41 inches, is very dark gray, dark brown, and gray sandy clay loam. The substratum to a depth of about 80 inches is light gray fine sandy loam.

The soils of minor extent in this map unit include Floridana, Gator, Okeelanta, and Paisley soils.

Most of the acreage in this map unit is in native vegetation. These soils flood frequently. They provide good habitat for wildlife.

Detailed Soil Map Units

The map units on the detailed soil maps at the back of this survey represent the soils in the survey area. The map unit descriptions in this section, along with the soil maps, can be used to determine the suitability and potential of a soil for specific uses. They also can be used to plan the management needed for those uses. More information on each map unit, or soil, is given under Use and Management of the Soils."

Each map unit on the detailed soil maps represents an area on the landscape and consists of one or more soils for which the unit is named.

A symbol identifying the soil precedes the map unit name in the soil descriptions. Each description includes general facts about the soil and gives the principal hazards and limitations to be considered in planning for specific uses.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer or of the underlying material, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer or of the underlying material. They also can differ in slope, stoniness, salinity, wetness, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Paisley fine sand, depressional, is one of several phases in the Paisley series.

Some map units are made up of two or more major soils. These map units are called soil associations.

A *soil association* is made up of two or more geographically associated soils that are shown as one unit on the maps. Because of present or anticipated soil uses in the survey area, it was not considered practical or necessary to map the soils separately. The pattern and relative proportion of the soils are somewhat similar. Sumterville-Mable-Tavares association, bouldery subsurface, 0 to 5 percent slopes, is an example.

Most map units include small scattered areas of soils other than those for which the map unit is named. Some of these included soils have properties that differ substantially from those of the major soil or soils. Such differences could significantly affect use and management of the soils in the map unit. The included soils are identified in each map unit description. Some small areas of strongly contrasting soils are identified by a special symbol on the soil maps.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Urban land is an example. Miscellaneous areas are shown on the soil maps. Some that are too small to be shown are identified by a special symbol on the soil maps.

Table 3 gives the acreage and proportionate extent of each map unit. Other tables (see Summary of Tables") give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils.

1—Arredondo fine sand, 0 to 5 percent slopes. This soil is nearly level to gently sloping and is well drained. It is in broad, upland areas. The mapped areas are wide and follow the contour of the uplands and range from 10 to 400 acres. The slopes are convex.

Typically, the surface layer is very dark grayish brown fine sand about 9 inches thick. The subsurface layer, to a depth of about 37 inches, is yellowish brown and brownish yellow fine sand. The next layer, to a depth of 57 inches, is strong brown loamy fine sand. The subsoil to a depth of 80 inches or more is yellowish brown and brown fine sandy loam and sandy clay loam.

Included with this soil in mapping are small areas of Candler, Kendrick, Lake, and Millhopper soils. Also included are areas of Arredondo soils that have random boulders. These areas are adjacent to a map unit that has a bouldery subsurface layer. The included soils make up about 15 to 20 percent of this map unit.

In most years, this soil does not have a high water table within 80 inches of the surface. The available water capacity is low in the surface and subsurface layers. Permeability is rapid in the surface and subsurface layers and is moderate in the subsoil. Natural fertility is moderate.

Most of the acreage in this map unit is in orange groves or improved pasture. Native vegetation is laurel oak, live oak, bluestem, paspalum, and threeawn.

This Arredondo soil has severe limitations for cultivated crops because of droughtiness and the rapid leaching of plant nutrients. If this soil is cultivated, row crops should be planted on the contour. Close-growing cover crops should be included in the rotation system at least two-thirds of the time. Soil-improving cover crops and the residue of other crops should be used to protect the soil from erosion. Conservation tillage helps to conserve moisture and controls erosion. Irrigation of high-value crops is generally feasible if water is readily available.

This soil is well suited to use as pasture. Coastal bermudagrass and bahiagrass grow well on this soil, but yields are reduced by periodic droughts. Grazing should be controlled to maintain plant vigor and a good ground cover.

This soil has moderately high potential for production of pine trees. Equipment use limitations and the seedling mortality rate are moderate concerns in management. Slash, loblolly, and longleaf pines are the most suitable trees to plant for commercial wood production.

Typically, this soil is characterized by the Longleaf Pine-Turkey Oak Hills range site. This community occurs on rolling land that is nearly level to strongly sloping. It is readily recognized by the landform and dominant vegetation of longleaf pine and turkey oak. Natural fertility is low because of the rapid movement of plant nutrients and water through the soil. Forage production and quality are poor, and cattle do not use this range site if other sites are available. Desirable forage on this site includes creeping bluestem, lopsided indiangrass, and low panicum.

This soil has slight limitations for most urban uses. Seepage is a severe limitation to use of this soil for sewage lagoons or landfill areas. If used for sewage lagoons or landfill areas, the sidewalls should be sealed. The sandy texture is a severe limitation for recreational use and causes poor trafficability in unpaved areas. A suitable topsoil fill material should be used or some type of surface stabilization is needed to reduce or overcome this limitation.

This Arredondo soil is in capability subclass IIIs and in woodland suitability group 10S.

3—Astatula fine sand, rolling. This soil is moderately sloping to strongly sloping and is excessively drained. It is on the sandhills of Sumter County. The mapped areas are irregular in shape. Most areas range from 20 to 700 acres. The slopes are complex and range from about 8 to 15 percent.

Typically, the surface layer is dark gray fine sand about 3 inches thick underlain by pale brown and grayish brown fine sand to a depth of about 6 inches. The upper part of the underlying material, to a depth of about 27 inches, is light yellowish brown fine sand. The middle part, to a depth of about 40 inches, is pale brown fine sand. The lower part to a depth of 80 inches or more is very pale brown fine sand.

Included with this soil in mapping are small areas of Candler, Florahome, Lake, and Tavares soils. Also included are areas of Astatula soils that have random boulders. These areas are adjacent to a map unit that has a bouldery subsurface layer. The included soils make up about 20 percent of this map unit.

This soil does not have a high water table within 80 inches of the surface. The available water capacity is very low. Permeability is very rapid. Natural fertility is very low.

Native vegetation is mostly turkey oak and sand pine. The understory includes pineland threeawn, bluestem, and paspalum.

This Astatula soil is generally not suitable for most commonly cultivated crops or pasture because of droughtiness, steep slopes, and rapid leaching of plant nutrients. Improved pasture grasses produce low amounts of forage even when good management practices are used. Grasses, such as pangolagrass and bahiagrass, are better suited to this soil.

Potential is low for the production of pine trees. Equipment use limitations, hazard of erosion on steeper slopes, and seedling mortality are the main concerns in management. Sand pine is the preferred tree to plant.

Typically, this soil is characterized by the Sand Pine Scrub range site. This site can be identified by a fairly dense stand of sand pine trees and a dense understory of oaks, saw palmetto, and other shrubs. Depending on past timber management practices, sand pines may not be present. The droughty nature of this soil limits its potential for producing native forage. If grazing is controlled, this range site can provide limited amounts of lopsided indiangrass, creeping bluestem, and switchgrass. Livestock generally do not use this range site if a more productive site is available. This community provides summer shade, winter protection, and a dry resting area during the wet periods.

Slope is a moderate limitation for most urban uses. Seepage is a severe limitation to use of this soil for sewage lagoons or landfill areas. If used for sewage lagoons or landfill areas, the floor and sidewalls should be sealed. The sandy texture is a severe limitation for recreational use. Slope is a severe limitation for playgrounds. A suitable topsoil fill material should be used or some type of surface stabilization is needed to reduce or overcome these limitations.

This Astatula soil is in capability subclass VIIs and in woodland suitability group 3S.

4—Candler sand, 0 to 5 percent slopes. This soil is nearly level to gently sloping and is excessively drained. It is on ridges, knolls, and broad uplands. The mapped areas mostly are irregular in shape and range from 100 to 1,000 acres. The slopes range from smooth to broken.

Typically, the surface layer is dark grayish brown sand about 8 inches thick. The subsurface layer, to a depth of about 50 inches, is light yellowish brown and yellowish brown sand. The next layers to a depth of 80 inches or more are yellow sand that has thin, strong brown textural bands.

Included in this soil in mapping are small areas of Apopka, Astatula, Lake, Millhopper, and Tavares soils. These soils are in the same slope position as the Candler soil. A few of the associated soils, such as Apopka, Astatula, and Lake soils, also have slopes of about 8 percent. Also included are areas of Candler soil that have random boulders. These areas are adjacent to a map unit that has a bouldery subsurface layer. The included soils make up less than 15 percent of this map unit.

This soil does not have a high water table within 80 inches of the surface. The available water capacity is very low throughout. Permeability is rapid. Natural fertility is low.

Native vegetation is mostly turkey oak (fig. 4), live oak, pineland threeawn, and running oak.

This Candler soil has very severe limitations for cultivated crops. Droughtiness and rapid leaching of plant nutrients reduce crop yields. If this soil is cultivated, row crops should be planted on the contour. Close-growing cover crops should be included in the rotation system at least three-fourths of the time. Soil-improving cover crops and the residue of other crops should be used to protect the soil from erosion. Irrigation of high-value crops is generally feasible if water is readily available.

The soil is moderately suited to pasture and hay crops. Deep-rooting plants, such as Coastal bermudagrass and bahiagrass, are well suited to this soil, but yields are reduced by periodic droughts. Regular applications of

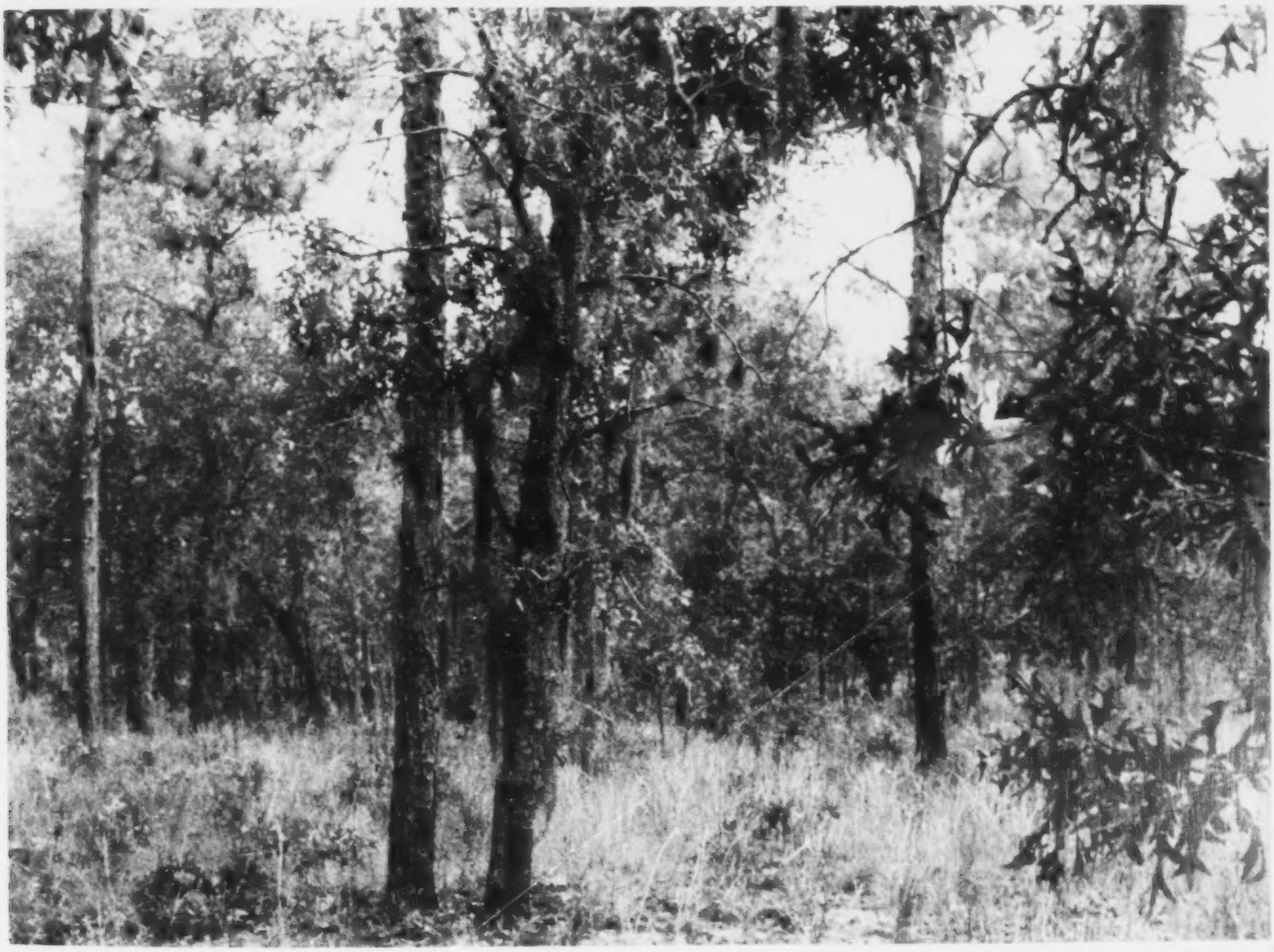

Figure 4.—Turkey oak is a common tree on this Candler sand, 0 to 5 percent slopes.

fertilizer and lime are needed. Grazing should be controlled to help maintain plant vigor.

Potential is moderate for the production of pine trees. Equipment use limitations and seedling mortality are concerns in management. Sand pine, slash pine, and longleaf pine are the most suitable trees to plant for commercial wood production.

Typically, this soil is characterized by the Longleaf Pine-Turkey Oak Hills range site. It is readily recognized by the landform and dominant vegetation of longleaf pine and turkey oak. Natural fertility is low because of the rapid movement of plant nutrients and water through the soil. Forage production and quality are poor, and cattle do not use this range site if other sites are available. Desirable forage on this site includes creeping bluestem, lopsided indiangrass, and low panicum.

This soil has slight limitations for most urban uses. Seepage and cutbank caving are severe limitations to use of this soil for sewage lagoons or landfill areas. If used for sewage lagoons or landfill areas, the floor and sidewalls should be lined and sealed. The sandy texture is a severe limitation for recreational uses. Wind erosion is a hazard if the surface soil is exposed. A good vegetative cover and windbreaks should be established and maintained on this soil. Adding a suitable topsoil fill material or using some form of surface stabilization also will reduce or overcome these limitations for most urban uses.

This Candler soil is in capability subclass IVs and in woodland suitability group 9S.

5—Candler sand, 5 to 8 percent slopes. This soil is moderately sloping and is excessively drained. It is on ridges and knolls. The mapped areas mostly follow the shape of the ridges and knolls and range from 20 to 50 acres. The slopes are concave.

Typically, the surface layer is dark grayish brown sand about 6 inches thick. The subsurface layer, to a depth of about 56 inches, is pale brown sand. The next layer to a depth of 80 inches or more has thin textural bands.

Included with this soil in mapping are small areas of Apopka, Astatula, and Lake soils. Also included are areas of Candler soils that have random boulders. These areas are adjacent to a map unit that has a bouldery subsurface layer. The included soils make up about 20 percent of this map unit.

The soil does not have a high water table within 80 inches of the surface. The available water capacity is low to very low. Permeability is very rapid. Natural fertility is low.

Native vegetation is turkey oak and live oak. The understory includes pineland threeawn and running oak.

This Candler soil is not suited to cultivated crops because of its poor quality, slope, and susceptibility to erosion.

This soil is moderately suited to pasture. Deep-rooting plants, such as Coastal bermudagrass and bahiagrass, are adapted to this soil, but yields are reduced by periodic droughts. Grazing should be restricted to help maintain plant vigor, to obtain high yields, and to help keep a good ground cover on the soil.

The potential of this soil is moderate for production of pine trees. Equipment use limitations and seedling mortality are concerns in management. Sand pine, slash pine, and longleaf pine are the most suitable trees to plant for commercial wood production.

Typically, this soil is characterized by the Longleaf Pine-Turkey Oak Hills range site. It is readily recognized by the landform and dominant vegetation of longleaf pine and turkey oak. Natural fertility is low because of the rapid movement of plant nutrients and water through the soil. Forage production and quality are poor, and cattle do not utilize this range site if other sites are available. Desirable forage on this site includes creeping bluestem, lopsided indiangrass, and low panicum.

This soil has slight limitations for most urban uses. Seepage is a severe limitation to use of this soil for sewage lagoons or sanitary landfill areas. If used for sewage lagoons or landfill areas, the floor and sidewalls should be sealed. The sandy texture of this soil is a severe limitation for recreational use and causes poor trafficability in unpaved areas. A suitable topsoil fill material should be used or some form or surface stabilization is needed to reduce or overcome this limitation.

This Candler soil is in capability subclass VIs and in woodland suitability group 9S.

6—Kendrick fine sand, 0 to 5 percent slopes. This soil is nearly level to gently sloping and is well drained. It is on the uplands. The mapped areas are irregular in shape and range from 10 to 50 acres. The slopes are convex.

Typically, the surface layer is dark grayish brown fine sand about 8 inches thick. The subsurface layer, to a depth of about 33 inches, is yellowish brown fine sand. The upper part of the subsoil, to a depth of about 68 inches, is strong brown fine sandy loam. The lower part to a depth of 80 inches or more is reddish yellow sandy clay loam.

Included with this soil in mapping are small areas of Apopka, Arredondo, Sumterville, Millhopper, and Tavares soils. Also included are areas of Kendrick soils that have random boulders. These areas are adjacent to a map unit that has a bouldery subsurface layer. The included soils make up about 20 percent of this map unit.

This soil does not have a high water table within 72 inches of the surface. The available water capacity is moderate. Permeability is rapid in the surface and subsurface layers and is moderate or moderately slow in the substratum. Natural fertility is moderate.

Native vegetation is mainly longleaf, loblolly, and slash pines and live, laurel, turkey, and water oaks. The understory includes several bluestem species, indiangrass, low panicum, and annual forbs.

This Kendrick soil has moderate limitations for cultivated crops because of poor soil qualities. Kendrick soil can be cultivated if good farming methods are used, but droughtiness and rapid leaching of plant nutrients limit the choice of crops and reduce crop yields. If good conservation practices are used, corn, soybeans, peanuts, and tobacco can be grown. Row crops should be planted on the contour in alternate strips with cover crops. Cover crops should be included in the rotation system at least half of the time. Cover crops and the residue of other crops should be used to maintain organic matter content and to protect the soil from erosion. For best yields, good seedbed preparation and proper application of fertilizer and lime are required. Irrigation of some high-value crops, such as tobacco, is generally feasible if water is readily available.

This soil is well suited to pasture. Deep-rooting plants, such as coastal bermudagrass and bahiagrass, produce well when they are fertilized and limed. Grazing should be controlled to increase plant vigor for maximum yields and to help maintain good ground cover.

The potential of this soil is high for production of pine trees. Limitations to use as woodland are slight. Slash, loblolly, and longleaf pines are the most suitable trees to plant for commercial wood production.

Typically, this soil is characterized by the Longleaf Pine-Turkey Oak Hills range site. It is readily recognized by the landform and dominant vegetation of longleaf pine and turkey oak. Natural fertility is low because of the rapid movement of plant nutrients and water through the soil. Forage production and quality are poor, and cattle do not use this range site if other sites are available. Desirable forage on this site includes creeping bluestem, lopsided indiangrass, and low panicum.

This soil has slight limitations for most urban uses. Seepage is a severe limitation to use of this soil for sewage lagoons or landfill areas. If used for sewage lagoons or landfill areas, the sidewalls should be sealed. Cutbank caving is a severe limitation for shallow excavations. This soil has slight limitations for recreational use.

This Kendrick soil is in capability subclass IIe and in woodland suitability group 11S.

8—Lake fine sand, 0 to 5 percent slopes. This soil is nearly level to gently sloping and is excessively drained. It is on ridges and knolls and in broad upland areas. The mapped areas are irregular in shape and range from 40 to 300 acres. The slopes are convex.

Typically, the surface layer is very dark grayish brown fine sand about 9 inches thick. The upper part of the underlying material, to a depth of about 63 inches, is brown, yellowish brown, and strong brown fine sand. The lower part to a depth of 80 inches or more is brownish yellow fine sand.

Included with this soil in mapping are small areas of Arredondo, Candler, Millhopper, and Tavares soils. Also included are areas of Lake soils that have random boulders. These areas are adjacent to a map unit that has a bouldery subsurface layer. The included soils make up about 20 percent of this map unit.

This soil does not have a high water table within 80 inches of the surface. The available water capacity is low throughout. Permeability is rapid or very rapid. Natural fertility is low.

Native vegetation is mostly blackjack, hickory, laurel, and live oaks. The understory includes scattered saw palmetto, pineland threeawn, and bluestems.

This Lake soil has very severe limitations for cultivated crops. Droughtiness and rapid leaching of plant nutrients reduce crop yields. If this soil is cultivated, row crops should be planted on the contour. Close-growing cover crops should be included in the rotation system at least three-fourths of the time and crop residue should be left on the surface to reduce erosion. Conservation tillage helps to conserve moisture and controls erosion. Irrigation of high-value crops is generally feasible if water is readily available.

This soil is moderately suited to pasture and hay crops. Deep-rooting plants, such as Coastal bermudagrass and bahiagrass, are well suited to this soil, but yields are reduced by periodic droughts. Regular applications of fertilizer and lime are needed. Grazing should be controlled to help maintain plant vigor.

The potential is moderate for the production of pine trees. Equipment use limitations and seedling mortality are concerns in management. Slash and longleaf pines are the most suitable trees to plant for commercial wood production.

Typically, this soil is characterized by the Longleaf Pine-Turkey Oak Hills range site. It is readily recognized by the landform and dominant vegetation of longleaf pine and turkey oak. Natural fertility is low because of the rapid movement of plant nutrients and water through the soil. Forage production and quality are poor, and cattle do not use this range site if other sites are available. Desirable forage includes creeping bluestem, lopsided indiangrass, and low panicum.

This soil has slight limitations for most urban uses. Seepage and cutbank caving are severe limitations to use of this soil for sewage lagoons or landfill areas. If used for sewage lagoons or landfill areas, the floor and sidewalls should be lined and sealed. The sandy texture is a severe limitation for recreational use and causes poor trafficability in unpaved areas. A suitable topsoil fill material should be used or some form of surface stabilization is needed to reduce or overcome this limitation.

This Lake soil is in capability subclass IVs and in woodland suitability group 10S.

9—Paisley fine sand, bouldery subsurface. This soil is nearly level and is poorly drained. It is on low broad flats and small knolls. The mapped areas are irregular in shape and range from 20 to 300 acres. Surface and subsurface boulders are approximately 30 to 150 feet apart. They occur randomly in small groups or individually. Although most boulders have been removed from the cropland and improved pasture, the remaining subsurface boulders can damage equipment that penetrates the soil. The slopes are smooth and range from 0 to 2 percent.

Typically, the surface layer is very dark grayish brown fine sand about 5 inches thick. The subsurface layer, to a depth of about 16 inches, is light brownish gray fine sand. The upper part of the subsoil, to a depth of about 25 inches, is gray sandy clay. The middle part, to a depth of about 45 inches, is gray clay. The lower part, to a depth of about 68 inches, is light gray sandy clay. The substratum to a depth of 80 inches or more is light gray sandy clay.

Included with this soil in mapping are small areas of EauGallie, Floridana, Ft. Green, Mabel, Sumterville, and Vero soils. The included soils make up about 20 percent of this map unit.

During most years, this soil has a high water table within 10 inches of the surface for 2 to 6 months. The available water capacity is moderate. Permeability is rapid in the surface and subsurface layers and is slow in the subsoil and substratum. Natural fertility is low.

Native vegetation is slash pine, longleaf pine, live oak, hickory, palms, and sweetgum. The understory includes saw palmetto, American beauty bush, inkberry, pineland threeawn, hairy and low panicums, and grapevines.

This Paisley soil has severe limitations for cultivated crops because of wetness. Boulders at or near the surface are a continuing nuisance during tillage operations. Most tillage operations are not impractical if the boulders are removed. A drainage system does not function well because of the slow permeability of the subsoil. With adequate drainage, this soil is suited to several high-value crops. A water control system is needed to remove excess surface water and subsurface water rapidly. Seedbed preparation should include bedding of the rows. Close-growing cover crops should be included in the rotation system at least two-thirds of the time. Conservation tillage helps to conserve moisture and controls erosion. Fertilizer and lime should be applied according to the need of the crops to increase yields.

This soil is well suited to pasture and hay crops. A drainage system is needed to remove excess surface water during heavy rains. Coastal bermudagrass, bahiagrass, and clover are well adapted to this soil. Good management practices include water control, applications of fertilizer and lime, and controlled grazing. Boulders should be removed to help prevent equipment damage.

The potential of this soil is very high for production of pine trees. Because of wetness, equipment use and seedling mortality are severe limitations to use as woodland. Slash and loblolly pines are the most suitable trees to plant for commercial wood production.

Typically, this soil is characterized by the Oak Hammock range site. This community is readily identified by the dense canopy cover of dominant live oak trees. Cattle use these areas primarily for shade and resting areas because of the dense canopy and relatively open understory. Desirable forage on this site includes longleaf uniola, low panicum, low paspalum, switchgrass, and lopsided indiangrass.

Wetness and the high shrink-swell potential of the clayey subsoil are severe limitations for urban and recreational uses. This wetness limitation can be reduced or overcome by installing a drainage system to lower the high water table during wet periods. Mounding may be needed in places for septic tank absorption fields because of wetness and slow permeability. Random large boulders or groups of boulders may require use of a modified installation design or an alternate site in the map unit for many urban uses. The sandy surface texture causes poor trafficability in unpaved areas and is a severe limitation for recreational use. A suitable topsoil fill material should be used or some type of surface stabilization is needed to overcome this limitation.

This Paisley soil is in capability subclass IIIw and in woodland suitability group 13W.

10—Sparr fine sand, 0 to 5 percent slopes. This soil is nearly level to gently sloping and is somewhat poorly drained. It is on broad, low ridges and knolls. The mapped areas mostly are irregular in shape and range from 20 to 100 acres. The slopes are convex.

Typically, the surface layer is gray fine sand about 9 inches thick. The subsurface layer, to a depth of about 45 inches, is pale brown and very pale brown fine sand. The upper part of the subsoil, to a depth of about 51 inches, is mottled light gray fine sandy loam. The lower part to a depth of about 80 inches is mottled light gray sandy clay loam.

Included with this soil in mapping are small areas of EauGallie, Millhopper, and Vero soils. Also included are areas of soils that are somewhat poorly drained but are loamy within 40 inches of the surface layer, some areas of soils that have a weak stain above the loamy layer, and some areas of Sparr soils that have random boulders. These areas are adjacent to a map unit that has a bouldery subsurface layer. The included soils make up about 25 percent of this map unit.

This soil has a high water table within 20 to 40 inches of the surface for 1 month to 4 months. The available water capacity is low to a depth of 60 inches. The available water capacity is low in the surface and subsurface layers and moderate in the subsoil.

Permeability is rapid in the surface and subsurface layers and is slow or moderately slow in the subsoil. Natural fertility is low.

Native vegetation is water, live, and scrub oaks. The understory includes pineland threeawn, scattered saw palmetto, and greenbrier.

This Sparr soil has severe limitations for cultivated crops because of periodic wetness and poor soil qualities. During wet periods, a high water table can cause some retardation of root development. A well-designed drainage system can help overcome this limitation. With good management practices and water control measures, this soil is suited to most locally grown crops. Good conservation practices, such as including close-growing, soil-improving cover crops in the cropping system at least two-thirds of the time, returning crop residue to the soil, and proper fertilizing and liming, should be used. Conservation tillage helps control erosion and conserves moisture.

This soil is well suited to pasture. Pangolagrass, bahiagrass, and clover are well suited to this soil. Good pastures of grass or of mixtures of grass and clover can be grown with good management. This soil requires regular applications of fertilizer and lime. Grazing should be controlled to obtain high yields.

The potential of this soil for production of pine trees is moderately high. Equipment use and seedling mortality are moderate limitations to use as woodland. Slash, loblolly, and longleaf pines are the most suitable trees to plant for commercial wood production.

Typically, this soil is characterized by the Oak Hammock range site. This community is readily identified by the dense canopy cover of dominantly live oak trees. Cattle use these areas primarily for shade and resting areas because of the dense canopy and relatively open understory. Desirable forage on this site includes longleaf uniola, low panicum, low paspalum, switchgrass, and lopsided indiangrass.

This soil has moderate limitations to use as sites for homes and small commercial buildings and for local roads and streets. The depth of the water table during wet periods is a severe limitation to use of this soil for septic tank absorption fields or for sanitary landfills. The sandy texture is a severe limitation for recreational use and causes poor trafficability in unpaved areas. A suitable topsoil fill material should be used or some other form of surface stabilization is needed to reduce or overcome this limitation.

This Sparr soil is in capability subclass IIIw and in woodland suitability group 10W.

11—Millhopper sand, 0 to 5 percent slopes. This soil is gently sloping and is moderately well drained. It is on the uplands. The mapped areas are broad and range from 50 to 200 acres.

Typically, the surface layer is dark grayish brown sand about 5 inches thick. The subsurface layer, to a depth of about 50 inches, is light yellowish brown, very pale brown, and brownish yellow fine sand. The upper part of the subsoil, to a depth of about 56 inches, is brownish yellow sandy clay loam that has strong brown mottles. The lower part to a depth of about 80 inches is light gray sandy clay loam that has brownish yellow, red, and strong brown mottles.

Included with this soil in mapping are small areas of Arredondo, Sparr, Sumterville, and Tavares soils. Also included are areas of Millhopper soils that have random boulders. These areas are adjacent to a map unit that has a bouldery subsurface layer. The included soils make up about 5 to 20 percent of this map unit.

In most years, this soil has a high water table within 40 to 60 inches of the surface for 1 month to 4 months and at a depth of 60 to 80 inches for 2 to 4 months. The available water capacity is low. Permeability is rapid in the surface and subsurface layers and is moderate in the subsoil. Natural fertility is low.

Most of the acreage in this map unit is in improved pasture. The native vegetation is live oak and turkey oak.

This Millhopper soil has severe limitations for most cultivated crops. Droughtiness and rapid leaching of plant nutrients limit the choice of plants and reduce crop yields. If this soil is cultivated, row crops should be planted on the contour. Close-growing cover crops should be included in the rotation system and the residue of other crops should be left on the surface to protect the soil from erosion. Irrigation of high-value crops is generally feasible if water is readily available (fig. 5).

This soil is well suited to pasture and hay crops. Coastal bermudagrass and improved bahiagrass are well suited to this soil, but yields are reduced by periodic droughts. Grasses respond to regular applications of fertilizer and lime. Grazing should be controlled to maintain plant vigor and a good ground cover.

The potential of this soil is moderately high for the production of pine trees. Equipment use limitations, seedling mortality, and plant competition are concerns in management. Slash, loblolly, and longleaf pines are the most suitable trees to plant for commercial wood production.

Typically, this soil is characterized by the Oak Hammock range site. This community is readily identified by the dense canopy cover of dominantly live oak trees. Cattle use these areas primarily for shade and resting areas because of the dense canopy and relatively open understory. Desirable forage on this site includes longleaf uniola, low panicum, low paspalum, switchgrass, and lopsided indiangrass.

This soil has slight limitations to use as sites for homes and small commercial buildings and for local roads and streets. The depth of the water table during wet periods is a moderate limitation as septic tank absorption fields. Seepage is a severe limitation for sewage lagoons or landfill areas. If used for sewage

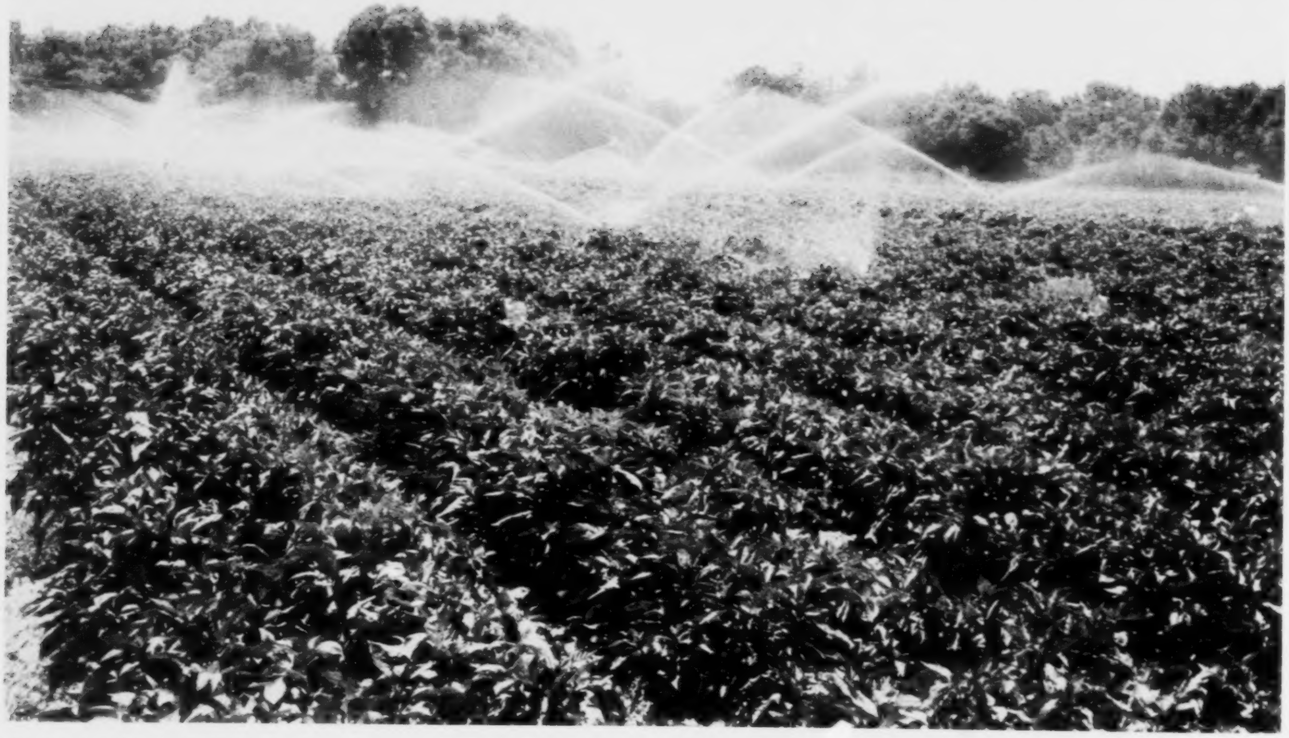

Figure 5.—Irrigation is a common practice for most cultivated crops in Sumter County. These bell peppers are growing on Millhopper sand, 0 to 5 percent slopes.

lagoons or landfill areas, the sandy sidewalls should be sealed. The sandy texture is a severe limitation for recreational use and causes poor trafficability in unpaved areas. A suitable topsoil fill material should be used or some form of surface stabilization is needed to reduce or overcome this limitation.

This Millhopper soil is in capability subclass IIIs and in woodland suitability group 10S.

13—Tavares fine sand, 0 to 5 percent slopes. This soil is nearly level to gently sloping and is moderately well drained. It is on low, broad ridges and knolls. The mapped areas are irregular in shape and are about 100 acres. The slopes are generally convex.

Typically, the surface layer is very dark grayish brown fine sand about 8 inches thick. The upper part of the underlying material, to a depth of about 28 inches, is grayish brown fine sand. The middle part, to a depth of about 68 inches, is pale brown and very pale brown fine sand. The lower part to a depth of 80 inches or more is white fine sand.

Included with this soil in mapping are small areas of Apopka, Candler, Millhopper, and Smyrna soils. Also included are some areas of soils that have a stained layer at a depth of more than 60 inches and some areas of Tavares soils that have random boulders. These areas are adjacent to a map unit that has a bouldery subsurface layer. The included soils make up about 20 percent of this map unit.

During most years, this soil has a high water table within 40 to 80 inches of the surface for more than 6 months but recedes to a depth of more than 80 inches during droughty periods. The available water capacity is low to very low. Permeability is very rapid. Natural fertility is low.

Native vegetation is slash and longleaf pines, scattered blackjack oak, turkey oak, and live oak. The understory includes pineland threeawn and scattered saw palmetto.

This Tavares soil has severe limitations for most cultivated crops. Droughtiness and rapid leaching of plant nutrients limit the choice of plants and reduce crop yields. A water table between depths of 40 and 60 inches affects the availability of water by providing water through capillary rise to supplement the low available water capacity. In very dry periods, the water table drops well below the root zone, and little capillary water is available to plants. Row crops should be planted on the contour in alternate strips with close-growing cover crops. Close-growing cover crops should be included in the rotation system at least two-thirds of the time. Conservation tillage helps to conserve moisture and controls erosion. All crops should be fertilized and limed. Soil-improving cover crops and the residue of other crops should be used to protect the soil from erosion. Irrigation of high-value crops is generally feasible if water is readily available.

This soil is well suited to pasture. Pangolagrass, Coastal bermudagrass, bahiagrass, white clover, and lespedeza are well adapted to this soil. High yields can be obtained if these grasses and legumes are fertilized and limed. Grazing should be controlled to maintain plant vigor for maximum yields.

The potential of this soil is moderately high for production of pine trees. Equipment use limitations and seedling mortality are the main concerns in management. Slash and longleaf pines are the preferred trees to plant for commercial wood production.

Typically, this soil is characterized by the Longleaf Pine-Turkey Oak Hills range site. It is readily recognized by the landform and dominant vegetation of longleaf pine and turkey oak. Natural fertility is low because of the rapid movement of plant nutrients and water through the soil. Forage production and quality are poor, and cattle do not use this range site if other sites are available. Desirable forage includes creeping bluestem, lopsided indiangrass, and low panicum.

This soil has slight limitations for most urban uses. Seepage is a severe limitation to use of this soil for sewage lagoons or landfill areas. If used for sewage lagoons or landfill areas, the floor and sidewalls should be lined and sealed. The sandy texture is a severe limitation for recreational use and causes poor trafficability in unpaved areas. A suitable topsoil fill material should be used or some form of surface stabilization is needed to reduce or overcome this limitation.

This Tavares soil is in capability subclass IIIs and in woodland suitability group 10S.

14—Lake fine sand, 5 to 8 percent slopes. This soil is moderately sloping and is excessively drained. It is on gently rolling sandhills. The mapped areas follow the contour of the sandhills and range from 30 to 100 acres. The slopes are convex.

Typically, the surface layer is dark grayish brown fine sand about 8 inches thick. The upper part of the underlying material, to a depth of about 50 inches, is brown and pale brown fine sand. The lower part to a depth of 80 inches or more is brownish yellow fine sand.

Included with this soil in mapping are small areas of Astatula, Candler, and Tavares soils. Also included are areas of Lake soils that have random boulders. These areas are adjacent to a map unit that has a bouldery subsurface layer. The included soils make up about 20 percent of this map unit.

This soil does not have a high water table within 80 inches of the surface. The available water capacity is very low. Permeability is rapid or very rapid. Natural fertility is very low.

Native vegetation is longleaf and slash pines and turkey oak. The understory includes scattered saw palmetto, pineland threeawn, and bluestems.

This Lake soil has very severe limitations for cultivated crops. Droughtiness and rapid leaching of plant nutrients are the main limitations. Steepness of slope also limits the use of this soil for cultivated crops because tillage operations are more difficult and the hazard of erosion is increased.

This soil is moderately suited to use as pasture. Grasses, such as pangolagrass and bahiagrass, respond fairly well to regular applications of fertilizer. Grazing should be controlled to help maintain plant vigor for high yields.

Potential is moderate for the production of pine trees. Equipment use and seedling mortality are concerns in management. Slash and longleaf pines are the most suitable trees to plant for commercial wood production.

Typically, this soil is characterized by the Longleaf Pine-Turkey Oak Hills range site. It is readily recognized by the landform and dominant vegetation of longleaf pine and turkey oak. Natural fertility is low because of the rapid movement of plant nutrients and water through the soil. Forage production and quality are poor, and cattle do not use this range site if other sites are available. Desirable forage includes creeping bluestem, lopsided indiangrass, and low panicum.

This soil has slight limitations for most urban uses. Seepage is a severe limitation to use of this soil for sewage lagoons or sanitary landfill areas. If used for sewage lagoons or landfill areas, the floor and sidewalls should be sealed. The sandy texture is a severe limitation for recreational use and causes poor trafficability in unpaved areas. A suitable topsoil fill material should be used or some form of surface stabilization is needed to reduce or overcome this limitation.

This Lake soil is in capability subclass VIs and in woodland suitability group 10S.

15—Adamsville fine sand, bouldery subsurface. This soil is nearly level and is somewhat poorly drained.

It is on low, broad flats and knolls. The mapped areas are irregular in shape and range from 10 to 400 acres. Surface and subsurface boulders are about 60 to 250 feet apart. They occur randomly in small groups or individually. Although most boulders have been removed from the cropland and improved pasture, the remaining subsurface boulders can damage equipment that penetrates the soil. The slopes are smooth and range from 0 to 2 percent.

Typically, the surface layer is gray fine sand about 5 inches thick. The upper part of the underlying material, to a depth of about 17 inches, is brown sand and light yellowish brown fine sand. The middle part, to a depth of about 29 inches, is very pale brown sand. The lower part to a depth of 80 inches or more is white fine sand.

Included with this soil in mapping are small areas of Ona, Pompano, Sparr, and Tavares soils. The included soils make up about 15 percent of this map unit.

In most years, this soil has a high water table within 20 to 40 inches of the surface for 2 to 6 months and at a depth of less than 60 inches for more than 9 months. It is at a depth of 10 to 20 inches for about 2 weeks in some years. The available water capacity is low throughout. Permeability is rapid. Natural fertility is low.

Native vegetation is pine, laurel oak, live oak, and water oak. The understory includes saw palmetto, pineland threeawn, indiangrass, bluestem grasses, and several low panicums.

This Adamsville soil has severe limitations for cultivated crops because of periodic wetness. Boulders at or near the surface are a continuing nuisance during tillage operations. Most tillage operations are not impractical if the boulders are removed. The adapted crops are very limited unless intensive water control measures are used. A water control system is needed to remove excess surface water in wet periods and to provide water for subsurface irrigation in dry periods. With adequate drainage, this soil is well suited to many kinds of flowers and vegetable crops. Good conservation practices, in addition to water control measures, should be used if this soil is cultivated. A close-growing cover crop should be included in the cropping system at least two-thirds of the time. Soil-improving cover crops and the residue of other crops should be used to control erosion and maintain organic matter content. Fertilizer and lime should be applied according to the need of the crops to increase crop yields.

This soil is moderately well suited to pasture. Pangolagrass and bahiagrass are well adapted to this soil. A drainage system is required to remove excess surface water during heavy rains. Regular applications of fertilizers may be needed to maintain crop yields. Some areas of this soil respond well to lime. Grazing should be carefully controlled to maintain plant vigor and to obtain high yields. Boulders should be removed to help prevent equipment damage.

Potential is moderately high for the production of pine trees. Equipment use, seedling mortality, and plant competition are concerns in management. Slash and longleaf pines are the most suitable trees to plant for commercial wood production.

Typically, this soil is characterized by the Oak Hammock range site. This community is readily identified by the dense canopy cover of dominantly live oak trees. Cattle use these areas primarily for shade and resting areas because of the dense canopy and relatively open understory. Desirable forage includes longleaf uniola, low panicum, low paspalum, switchgrass, and lopsided indiangrass.

Wetness is a severe limitation for urban and recreational uses. This wetness limitation can be reduced or overcome by installing a drainage system to lower the high water table during wet periods. Mounding may be needed in places for septic tank absorption fields because of wetness. Random large boulders or groups of boulders may require use of a modified installation design or an alternate site in the map unit for many urban uses. The sandy texture is a severe limitation for recreational use and causes poor trafficability in unpaved areas. A suitable topsoil fill material should be used or some type of surface stabilization is needed to overcome this limitation.

This Adamsville soil is in capability subclass IIIw and in woodland suitability group 10W.

16—Apopka fine sand, 0 to 5 percent slopes. This soil is nearly level to gently sloping and is well drained. It is on the uplands. The mapped areas are irregular in shape and range from about 10 to 250 acres. The slopes are convex.

Typically, the surface layer is dark gray fine sand about 8 inches thick. The subsurface layer, to a depth of about 54 inches, is pale brown and very pale brown fine sand. The upper part of the subsoil, to a depth of about 63 inches or more, is brownish yellow sandy loam. The lower part to a depth of about 80 inches is reddish yellow sandy loam.

Included with this soil in mapping are small areas of Arredondo, Astatula, Candler, Kendrick, Lake, Millhopper, and Tavares soils. Also included are areas of Apopka soils that have random boulders. These areas are adjacent to a map unit that has a bouldery subsurface layer. The included soils make up about 20 to 25 percent of this map unit.

This soil does not have a high water table within 72 inches of the surface in most years. The available water capacity is low. Permeability is rapid in the surface and subsurface layers and is moderate in the subsoil. Natural fertility is low.

Most of the acreage in this map unit is in improved pasture. The native vegetation is mostly live oak, bluestem, dogfennel, paspalum, and threeawn.

This Apopka soil has severe limitations for cultivated crops. Droughtiness and rapid leaching of plant nutrients are the main limitations. If this soil is cultivated, row crops should be planted on the contour. Close-growing cover crops should be included in the cropping system at least two-thirds of the time. Soil-improving cover crops and residue of other crops should be used to protect the soil from erosion. Conservation tillage helps conserve moisture and controls erosion. Irrigation of high-value crops is generally feasible if water is readily available.

This soil is well suited to pasture. Coastal bermudagrass and bahiagrass are well adapted to this soil, but yields are reduced by periodic droughts. Grazing should be controlled to maintain plant vigor and a good ground cover.

The potential of this soil is moderately high for the production of pine trees. Equipment use and seedling mortality are moderate limitations to use as woodland. Slash, loblolly, and longleaf pines are the most suitable trees to plant for commercial wood production.

Typically, this soil is characterized by the Longleaf Pine-Turkey Oak Hills range site. It is readily recognized by the landform and dominant vegetation of longleaf pine and turkey oak. Natural fertility is low because of the rapid movement of plant nutrients and water through the soil. Forage production and quality are poor, and cattle do not use this range site if other sites are available. Desirable forage includes creeping bluestem, lopsided indiangrass, and low panicum.

This soil has slight limitations for most urban uses. Seepage is a severe limitation to use of this soil for sewage lagoons or landfill areas. If used for sewage lagoons or landfill areas, the sidewalls should be sealed. The sandy texture is a severe limitation for recreational use and causes poor trafficability in unpaved areas. A suitable topsoil fill material should be used or some form of surface stabilization is needed to reduce or overcome this limitation.

This Apopka soil is in capability subclass IIIs and in woodland suitability group 10S.

17—Sumterville-Mabel-Tavares association, bouldery subsurface, 0 to 5 percent slopes. The soils in this map unit consist of nearly level to gently sloping, somewhat poorly drained to moderately well drained soils. Individual areas in this map unit are too intermingled and small to map separately at the selected scale. These soils are in wide areas on the uplands. They range from 100 to 300 acres. Surface and subsurface boulders are about 30 to 150 feet apart. They occur randomly in small groups or individually. Although most boulders have been removed from cropland and improved pasture, the remaining subsurface boulders can damage equipment that penetrates the soil.

This map unit is made up of about 45 to 60 percent Sumterville soil and closely similar soils, 15 to 25 percent Mabel soil, and 10 to 15 percent Tavares soil. Sumterville soil is on narrow ridges that are about 50 to 100 feet wide. The mapped areas of the Sumterville soil are about 20 acres. Mabel soil is on the higher elevations and on the side slopes. The mapped areas of the Mabel soil are irregular in shape and are about 8 acres. The Tavares soil is on the side slopes or in the concave areas between ridges and also in the convex areas on the ridges. The mapped areas of the Tavares soil are about 6 acres.

Sumterville soil has a surface layer of dark gray fine sand about 7 inches thick. The subsurface layer, to a depth of about 25 inches, is light yellowish brown and very pale brown fine sand that has yellow and yellowish brown mottles. The upper part of the subsoil, to a depth of about 43 inches, is light gray sandy clay that has yellowish red and brown mottles. The lower part to a depth of about 76 inches is light gray sandy clay that has mottles of brown and yellow.

During most years, Sumterville soil has a high water table at a depth of 18 to 36 inches for 2 to 3 months. It recedes to a depth of more than 60 inches during the drier periods. Permeability is moderately rapid in the surface and subsurface layers and is slow in the subsoil. The available water capacity is medium.

Mabel soil has a surface layer of gray fine sand about 6 inches thick. The subsurface layer, to a depth of about 14 inches, is grayish brown and light brownish gray fine sand that has yellowish brown mottles. The upper part of the subsoil, to a depth of about 26 inches, is yellowish brown sandy clay that has red mottles. The lower part, to a depth of about 52 inches, is light gray sandy clay that has yellow and brown mottles. The substratum to a depth of 80 inches is light gray fine sandy loam.

During most years, Mabel soil has a high water table at a depth of 20 to 40 inches for 1 month to 4 months. It recedes to a depth of more than 40 inches during the drier periods. Permeability is rapid in the surface and subsurface layers and is moderate to moderately slow in the subsoil. The available water capacity is medium.

Tavares soil has a surface layer of very dark grayish brown fine sand about 8 inches thick. The upper part of the underlying material, to a depth of about 46 inches, is grayish brown and pale brown fine sand. The middle part, to a depth of about 68 inches, is very pale brown fine sand that has yellow mottles. The lower part to a depth of 80 inches or more is white fine sand that has yellow mottles.

During most years, Tavares soil has a high water table at a depth of 40 to 60 inches for 1 month to 4 months. It recedes to a depth of more than 60 inches during the drier periods. Permeability is rapid. The available water capacity is low.

Included with these soils in mapping are some areas of Millhopper soils. The included soil makes up as much as 15 percent of some of the mapped areas.

Native vegetation on the soils in this map unit is turkey oak, live oak, slash pine, longleaf pine, scattered blackjack oak, and post oak. The understory includes pineland threeawn and scattered saw palmetto.

The soils in this map unit have moderate limitations for most cultivated crops because of poor soil quality. Boulders at or near the surface are a continuing nuisance during tillage operations. Most tillage operations are not impractical if the boulders are removed. If the soils in this association are cultivated, close-growing cover crops should be included in the rotation system at least two-thirds of the time. Soil-improving cover crops and the residue of other crops should be used to protect the soil from erosion. Irrigation of high-value crops is generally feasible if water is readily available.

These soils are moderately well suited to pasture and hay crops. Coastal bermudagrass and improved bahiagrass are well suited to these soils, but yields are reduced by periodic droughts. Grasses respond to regular applications of fertilizer and lime. Grazing should be controlled to maintain plant vigor and a good ground cover. Boulders should be removed to help prevent equipment damage.

Sumterville and Mabel soils have high potential for production of pine trees, but Tavares soil has moderately high potential. Equipment use limitations, seedling mortality, and plant competition are concerns in management. Slash and longleaf pines are the most suitable trees to plant for commercial wood production.

Typically, Sumterville soil is characterized by the Oak Hammock range site, Mabel soil is characterized by the Upland Hardwood Hammock range site, and Tavares soil is characterized by the Longleaf Pine-Turkey Oak Hills range site. These communities are readily identified by the dense canopy cover of dominantly live oak trees. Cattle use these areas primarily for shade and resting areas because of the dense canopy and relatively open understory. Desirable forage includes longleaf uniola, low panicum, low paspalum, switchgrass, and lopsided indiangrass.

The soils in this association have slight to severe limitations for most urban uses. Wetness and slow permeability are severe limitations to use of Sumterville and Mabel soils as septic tank absorption fields. Wetness and slow permeability are moderate limitations on Tavares soils. The shrink-swell potential of the clayey subsoil is a limitation for building sites on Sumterville and Mabel soils. Seepage is a severe limitation for sewage lagoons or landfill areas. If used for sewage lagoons or landfill areas, the sandy sidewalls should be sealed. Random large boulders or groups of boulders may require the use of a modified installation design or an alternate site in the map unit for many urban uses. The sandy texture of the soils in this association causes poor trafficability in unpaved areas and is a severe limitation for recreational use. A suitable topsoil fill material should be used or some form of surface stabilization is needed to reduce or overcome this limitation.

This Sumterville soil is in capability subclass IIw and in woodland suitability group 11A. Mabel soil is in capability subclass IIIw and in woodland suitability group 11W. Tavares soil is in capability subclass IIIs and in woodland suitability group 10S.

18—Okeelanta muck. This soil is nearly level and is very poorly drained. It is in depressional areas. The mapped areas are irregular in shape and range from 10 to 100 acres. The slopes range from 0 to 1 percent.

Typically, the surface layer, to a depth of about 38 inches, is black muck underlain by dark reddish brown muck. The underlying material to a depth of about 80 inches is grayish brown and light gray fine sand.

Included with this soil in mapping are small areas of Gator, Placid, Pompano, and Terra Ceia soils. The included soils make up about 15 percent of this map unit.

The soil is covered by water 6 to 12 months during most years unless drained. The available water capacity is high throughout. Permeability is rapid throughout. Natural fertility is moderate.

Native vegetation is pickerelweed, willow, sawgrass, lilies, and other water-tolerant plants.

This Okeelanta soil is not suitable for cultivated crops unless it is drained. With adequate drainage, it is well suited to most vegetable crops and to sugarcane. A well-designed and maintained water control system should provide for the removal of excess surface water when crops are on the land and should keep the soils saturated at all other times. Fertilizers that contain phosphates, potash, and minor elements are needed. Water-tolerant cover crops should be on the soils when they are not planted to row crops.

In its natural state, this soil is not suited to improved pasture; however, most improved grasses and clovers adapted to the area grow well on these soils when water is properly controlled. Pangolagrass, bahiagrasses, and white clover grow well. A water control system is needed to help maintain the water table near the surface to prevent excessive oxidation of the organic horizons. Fertilizers that have a high content of potash, phosphorus, and minor elements are needed. Grazing should be controlled to maintain plant vigor and to obtain maximum yields.

This soil is not suited to pine trees because of ponding.

Typically, this soil is characterized by the Freshwater Marshes and Ponds range site. This site can be identified by an open expanse of grasses, sedges, rushes, and other herbaceous plants. If grazing is controlled, this range site has the potential to produce more forage than any of the other range sites. Chalky bluestem and blue maidencane dominate the drier parts of the range site, and maidencane is the dominant plant in the wetter parts. Other desirable forage on this site includes cutgrass, bluejoint panicum, sloughgrass, and low panicum. Periodic high water levels provide a natural deferment from cattle grazing. Carpetgrass, an introduced plant, tends to dominate the drier parts of the range site if the soil is overgrazed.

Excess humus and wetness are severe limitations for urban and recreational uses. Removal of organic material and backfilling will not overcome the wetness limitation unless a substantial amount of suitable fill material is used.

This Okeelanta soil is in capability subclass VIIw and in woodland suitability group 6W.

19—Apopka fine sand, 5 to 8 percent slopes. This soil is sloping and is well drained. It is on wide ridges and knolls. The mapped areas mostly follow the shape of the ridges and knolls and are 20 to 200 acres. The slopes are concave.

Typically, the surface layer is grayish brown fine sand about 6 inches thick. The subsurface layer, to a depth of about 45 inches, is pale brown and very pale brown fine sand. The upper part of the subsoil, to a depth of about 52 inches, is reddish yellow sandy loam. The lower part to a depth of about 80 inches is reddish yellow sandy loam that has red mottles.

Included with this soil in mapping are small areas of Arredondo, Candler, Kendrick, and Millhopper soils. Also included are areas of Apopka soils that have random boulders. These areas are adjacent to a map unit that has a bouldery subsurface layer. The included soils make up about 20 percent of this map unit.

This soil does not have a high water table within 72 inches of the surface. The available water capacity is low. Permeability is rapid in the surface and subsurface layers and is moderate in the subsoil. Natural fertility is low.

Native vegetation is turkey oak and live oak. The understory includes bluestem, paspalum, and threeawn.

This Apopka soil has very severe limitations for cultivated crops because of poor soil qualities and steepness of slope. If this soil is cultivated, special soil-improving measures and erosion control measures are required. Droughtiness, rapid leaching of plant nutrients, and erosion are the main limitations to use of this soil for row crops. Cultivated crops should be planted on the contour. Conservation tillage helps to conserve moisture and controls erosion. Frequent applications of fertilizers and lime are needed.

This soil is moderately well suited to pasture and hay crops. Deep-rooting plants, such as Coastal bermudagrass and bahiagrass, normally grow well if they are fertilized and limed. Yields are occasionally restricted by extended droughts. Grazing should be controlled to maintain plant vigor and to obtain high yields.

The potential of this soil is moderately high for the production of pine trees. Equipment use limitations and seedling mortality are concerns in management. Slash, loblolly, and longleaf pines are the most suitable trees to plant for commercial wood production.

Typically, this soil is characterized by the Longleaf Pine-Turkey Oak Hills range site. It is readily recognized by the landform and dominant vegetation of longleaf pine and turkey oak. Natural fertility is low because of the rapid movement of plant nutrients and water through the soil. Forage production and quality are poor, and cattle do not use this range site if other sites are available. Desirable forage includes creeping bluestem, lopsided indiangrass, and low panicum.

This soil has slight limitations for most urban uses. Seepage is a severe limitation to use of this soil for sewage lagoons or landfill areas. Slope can also be a factor affecting sewage lagoons. If this soil is used for sewage lagoons or landfill areas, the sidewalls should be sealed. The sandy texture is a severe limitation for recreational use and causes poor trafficability in unpaved areas. A suitable topsoil fill material should be used or some form of surface stabilization is needed to reduce or overcome this limitation.

This Apopka soil is in capability subclass IVs and in woodland suitability group 10S.

20—Florahome sand, 0 to 5 percent slopes. This soil is nearly level to gently sloping and is moderately well drained. It is on the broad uplands. The mapped areas mostly are irregular in shape and range from 50 to 100 acres. The slopes are smooth and range from 0 to 5 percent.

Typically, the surface layer is very dark gray grading to very dark grayish brown sand about 20 inches thick (fig. 6). The next layer, to a depth of about 33 inches, is brown sand. The underlying material to a depth of 80 inches or more is pale brown and light gray sand.

Included with this soil in mapping are small areas of Adamsville, Millhopper, Sparr, and Tavares soils. Also included are some small areas of soils that are similar to the other included soils and to Florahome soil, but they have a weak Bh horizon at a depth of more than 70 inches. In some places are areas of Florahome soils that have random boulders. These areas are adjacent to a map unit that has a bouldery subsurface layer. The included soils make up about 20 percent of this map unit.

During most years, this soil has a high water table within 48 to 60 inches of the surface for 1 month to 4 months and at a depth of 60 to 72 inches for 2 to 4 months. It is at a depth of 30 to 48 inches for about 2 weeks in some years. The available water capacity is low to very low. Permeability is rapid. Natural fertility is low.

Native vegetation is live oak, laurel oak, bluejack oak, and scattered slash pine. The understory includes pineland threeawn and scattered saw palmetto.

This Florahome soil has severe limitations for most cultivated crops. Droughtiness and rapid leaching of

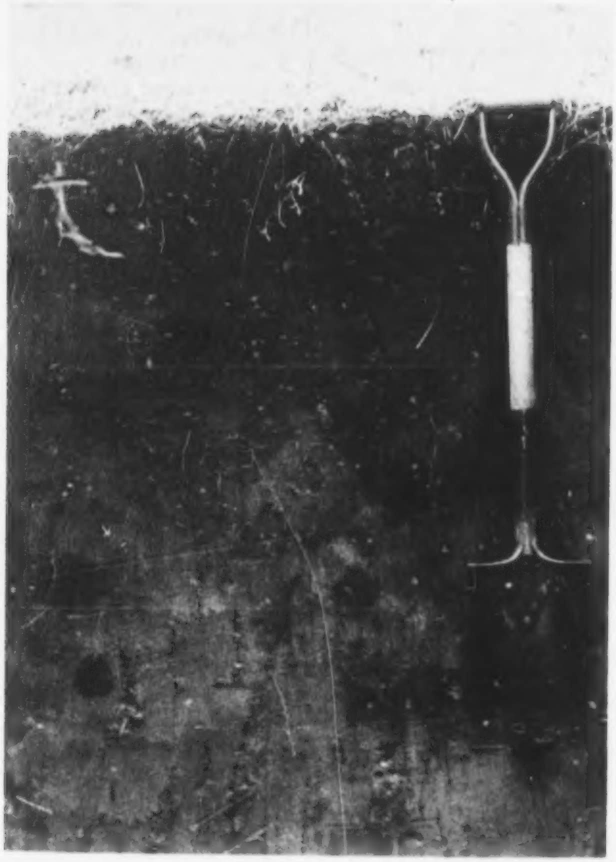

Figure 6.—This profile of Florahome sand, 0 to 5 percent slopes, shows a dark surface layer that is 20 inches thick.

plant nutrients limit the choice of plants and reduce crop yields. A water table between depths of 40 and 60 inches affects the availability of water by providing water through capillary rise to supplement the low available water capacity. In very dry periods, the water table drops well below the root zone, and little capillary water is available to plants. Row crops should be planted on the contour in alternate strips with close-growing cover crops. Close-growing cover crops should be included in the rotation system at least two-thirds of the time. Conservation tillage helps to conserve moisture and controls erosion. This soil should be fertilized and limed according to the need of the crops. Soil-improving cover crops and the residue of other crops should be used to protect the soil from erosion. Irrigation of high-value crops is generally feasible if water is readily available. Because of a high water table during the growing season, a tile drainage system or other types of drainage may be needed to reduce crop damage.

This soil is well suited to use as pasture. Pangolagrass, Coastal bermudagrass, bahiagrass, and white clover and lespedezas are well adapted to this soil. High yields can be obtained if these grasses and legumes are fertilized and limed. Grazing should be controlled to maintain plant vigor for maximum yields.

Potential is moderately high for the production of pine trees. Equipment use, seedling mortality, and plant competition are concerns in management. Slash and longleaf pines are the preferred trees to plant for commercial wood production.

Typically, this soil is characterized by the Oak Hammock range site. This community is readily identified by the dense canopy cover of dominantly live oak trees. Cattle use these areas primarily for shade and resting areas because of the dense canopy and relatively open understory. Desirable forage includes longleaf uniola, low panicum, low paspalum, switchgrass, and lopsided indiangrass.

This soil has slight limitations for most urban uses. Seepage is a severe limitation to use of this soil for sewage lagoons or landfill areas. If used for sewage lagoons or landfill areas, the floor and sidewalls should be lined and sealed. The sandy texture is a severe limitation for recreational use and causes poor trafficability in unpaved areas. A suitable topsoil fill material should be used or some form of surface stabilization is needed to reduce or overcome this limitation.

This Florahome soil is in capability subclass IIIs and in woodland suitability group 10S.

21—EauGallie fine sand, bouldery subsurface. This soil is nearly level and is poorly drained. It is on the broad flatwoods. The mapped areas are irregular in shape and range from 20 to 300 acres. Surface and subsurface boulders are approximately 60 to 250 feet apart. They occur randomly in small groups or individually. Although most boulders have been removed from the cropland and improved pasture, the remaining subsurface boulders can damage equipment that penetrates the soil. The slopes are smooth and range from 0 to 2 percent.

Typically, the surface layer is dark gray fine sand about 8 inches thick. The subsurface layer, to a depth of about 25 inches, is light gray fine sand. The upper part of the subsoil, to a depth of about 36 inches, is very dark brown fine sand. The lower part, to a depth of about 57 inches, is brown fine sand. The substratum to a depth of 80 inches or more is gray sandy clay loam that has mottles in shades of yellow and red.

Included with this soil in mapping are small areas of Mabel, Myakka, Paisley, and Vero soils. The included soils make up about 20 percent of this map unit.

In most years, this soil has a high water table within 10 to 40 inches of the surface for more than 6 months and at a depth of less than 10 inches for 1 month to 4 months. The available water capacity is moderate. Permeability is rapid in the surface and subsurface layers. It is moderate or moderately rapid in the upper part of the subsoil and moderately slow in the lower part. Natural fertility is low.

Native vegetation is slash pine, longleaf pine, live oak, and water oak. The understory includes saw palmetto, gallberry, running oak, and pineland threeawn.

This EauGallie soil has very severe limitations for cultivated crops because of wetness. Boulders at or near the surface are a continuing nuisance during tillage operations. Most tillage operations are not impractical if the boulders are removed. The adapted crops are limited unless very intensive conservation practices are followed. Good conservation practices and water control measures should be used if this soil is cultivated. With adequate drainage, this soil is well suited to many vegetable crops. A water control system is needed to remove excess surface water in wet periods and to provide water for subsurface irrigation in dry periods. Row crops should be planted on the contour. Soil improving cover crops should be included in the rotation system three-fourths of the time. Conservation tillage helps to conserve moisture and controls plant damage from blowing soil. Seedbed preparation should include bedding of the rows. Fertilizer and lime should be applied according to the need of the crops.

This soil is well suited to pasture and hay crops. Pangolagrass, bahiagrass, and clover are well adapted to this soil and grow well if they are properly managed. A drainage system is needed to remove excess surface water during heavy rains. These grasses and legumes also require regular applications of fertilizer and lime. Grazing should be carefully controlled to maintain healthy plants for maximum yields. Boulders should be removed to help prevent equipment damage.

The potential is moderately high for the production of pine trees. Equipment use limitations, seedling mortality, and plant competition are concerns in management. Slash pine is the preferred tree to plant for commercial wood production.

Typically, this soil is characterized by the South Florida Flatwoods range site. This site can be identified by scattered pine trees and an understory of saw palmetto and grasses. If grazing is controlled, the site has the potential to produce significant amounts of creeping bluestem, lopsided indiangrass, chalky bluestem, and various panicums. As range deterioration occurs because of overgrazing, the site is dominated by saw palmetto and pineland threeawn (wiregrass). Some areas of this soil support dense stands of oak trees. This soil provides good shade and resting areas for cattle but provides insufficient grazing.

Wetness is a severe limitation for urban and recreational uses. This wetness limitation can be reduced or overcome by installing a drainage system to lower the high water table during wet periods. Mounding may be needed in places for septic tank absorption fields. Seepage should be controlled before using this soil for sanitary facilities because of the possibility of pollution of water supplies. Random large boulders or groups of boulders may require use of a modified installation design or an alternate site in the map unit for many urban uses. The sandy texture is a severe limitation for recreational use and causes poor trafficability in unpaved areas. A suitable topsoil fill material should be used or some type of surface stabilization is needed to overcome this limitation.

This EauGallie soil is in capability subclass IVw and in woodland suitability group 10W.

22—Smyrna fine sand. This soil is nearly level and is poorly drained. It is on the broad flatwoods. The mapped areas are irregular in shape and range from 10 to 200 acres. The slopes are smooth and range from 0 to 2 percent.

Typically, the surface layer is very dark gray fine sand about 3 inches thick. The subsurface layer, to a depth of about 15 inches, is light brownish gray and light gray fine sand. The upper part of the subsoil, to a depth of 17 inches, is very dark grayish brown fine sand. The middle part, to a depth of 28 inches, is dark brown fine sand. The lower part, to a depth of about 36 inches, is brown fine sand. The substratum to a depth of about 80 inches is yellowish brown, very pale brown, and light yellowish brown fine sand.

Included with this soil in mapping are small areas of EauGallie, Myakka, and Ona soils. The included soils make up about 10 to 15 percent of this map unit.

In most years, this soil has a high water table between depths of 10 and 40 inches for more than 6 months and at a depth of less than 10 inches for 1 month to 4 months. The available water capacity is low to very low in the surface and subsurface layers and is moderate in the subsoil. Permeability is rapid in the surface layer, moderate or moderately rapid in the subsoil, and rapid in the substratum. Natural fertility is low.

Native vegetation is longleaf pine and slash pine. The understory includes saw palmetto, running oak, gallberry, waxmyrtle, and pineland threeawn.

This Smyrna soil has very severe limitations for cultivated crops because of wetness. The adapted crops suited to this soil are limited unless intensive water control measures are used. If a water control system is designed to remove excess water, this soil is suitable for vegetable crops. Good conservation practices, in addition to water control measures, should be used when this soil is cultivated. Close-growing, soil-improving cover crops should be included in the rotation system at least two-thirds of the time. These crops and the residue of the other crops should be used to protect the soil from wind erosion. Conservation tillage helps to conserve moisture and controls erosion. Fertilizer and lime should be applied according to the need of the crop.

This soil is well suited to pasture. Pangolagrass, bahiagrass, and clover are well adapted to this soil and grow well if properly managed. A water control system is needed to remove excess surface water during heavy rains. To increase yields, regular applications of fertilizer are needed, and grazing should be controlled to maintain plant vigor.

This soil has moderate potential for the production of pine trees. Equipment limitations and seedling mortality are the main concerns in management. A good drainage system is needed to remove the excess water. Slash pine is the preferred tree to plant for commercial wood production.

Typically, this soil is characterized by the South Florida Flatwoods range site. This site can be identified by scattered pine trees and an understory of saw palmetto and grasses. If grazing is controlled, the site has the potential to produce significant amounts of creeping bluestem, lopsided indiangrass, chalky bluestem, and various panicums. As range deterioration occurs because of overgrazing, the site is dominated by saw palmetto and pineland threeawn (wiregrass). A few areas of this soil support dense stands of oak trees. This soil provides good shade and resting areas for cattle but provides insufficient grazing.

Wetness is a severe limitation for urban and recreational uses. This wetness limitation can be reduced or overcome by installing a drainage system to lower the high water table during wet periods. Seepage should be controlled before using this soil for sanitary facilities because of the possibility of pollution of water supplies. The sandy texture is a severe limitation for recreational use and causes poor trafficability in unpaved areas. A suitable topsoil fill material should be used or some other type of surface stabilization is needed to overcome this limitation.

This Smyrna soil is in capability subclass IVw and in woodland suitability group 10W.

23—Ona fine sand. This soil is nearly level and is poorly drained. It is on the broad flatwoods. The mapped areas are irregular in shape and range from 20 to 100 acres. The slopes are smooth and range from 0 to 2 percent.

Typically, the surface layer is about 9 inches thick. It is very dark gray fine sand that has many uncoated sand grains. The upper part of the subsoil, to a depth of about 13 inches, is very dark gray fine sand that has many sand grains well coated with organic matter. The lower part, to a depth of about 20 inches, is dark brown fine sand that has many sand grains well coated with organic matter. The upper part of the substratum, to a depth of 40 inches, is brown fine sand. The next layer, to a depth of 55 inches, is light yellowish brown fine sand. The next layer, to a depth of 65 inches, is brown fine sand. The lower part to a depth of about 80 inches is pale brown fine sand.

Included with this soil in mapping are small areas of Adamsville, EauGallie, Myakka, and Smyrna soils. Also included are areas of Ona soils that have random boulders. These areas are adjacent to a map unit that has a bouldery subsurface layer. The included soils make up about 15 percent of this map unit.

In most years, this soil has a high water table between depths of 10 and 40 inches for 4 to 6 months and at a depth of less than 10 inches for 1 month to 2 months. The available water capacity is low throughout. Permeability is rapid in the surface layer, moderate in the subsoil, and rapid in the substratum. Natural fertility is low.

Native vegetation is slash pine and longleaf pine. The understory includes saw palmetto, gallberry, waxmyrtle, and pineland threeawn.

This Ona soil has severe limitations for cultivated crops unless intensive water control measures are used. A water control system is needed to remove excess surface water in wet periods and provide water for subsurface irrigation in dry periods. With adequate drainage, this soil is well suited to many kinds of flower and vegetable crops. Close-growing, soil-improving cover crops should be included in the rotation system at least two-thirds of the time. Soil-improving cover crops and the residues of other crops should be used to protect the soil from erosion. Fertilizer and lime should be applied according to the need of the crop.

These soils are well suited to pasture. Pangolagrass, bahiagrass, and clover grow well when they are properly managed. To obtain maximum yields, a drainage system is needed to remove excess water. Regular applications of fertilizers and lime are needed, and grazing should be controlled to maintain plant vigor.

Potential is moderately high for the production of pine trees. Equipment limitations and seedling mortality are the main concerns in management. Slash pine is the preferred tree to plant for commercial wood production.

Typically, this soil is characterized by the South Florida Flatwoods range site. This site can be identified by scattered pine trees and an understory of saw palmetto and grasses. If grazing is controlled, the site has the potential to produce significant amounts of creeping bluestem, lopsided indiangrass, chalky bluestem, and various panicums. As range deterioration occurs because of overgrazing, the site is dominated by saw palmetto and pineland threeawn (wiregrass).

Wetness is a severe limitation for urban and recreational uses. This wetness limitation can be reduced or overcome by installing a drainage system to lower the high water table during wet periods. Seepage should be controlled before using this soil for sanitary facilities because of the possibility of pollution of water supplies. The sandy texture is a severe limitation for recreational use and causes poor trafficability in unpaved areas. A suitable topsoil fill material should be used or some other type of surface stabilization is needed to overcome this limitation.

This Ona soil is in capability subclass IIIw and in woodland suitability group 10W.

24—Basinger fine sand. This soil is nearly level and is poorly drained. It is in poorly defined drainageways. The mapped areas are irregular in shape and range from 10 to 60 acres. The slopes are smooth and range from 0 to 2 percent.

Typically, the surface layer is black fine sand about 8 inches thick. The subsurface layer, to a depth of about 27 inches, is light brownish gray and light gray fine sand. The subsoil, to a depth of 45 inches, is dark brown fine sand. The substratum to a depth of 80 inches or more is grayish brown fine sand.

Included with this soil in mapping are small areas of Myakka, Ona, Placid, and Pompano soils. The included soils make up about 15 percent of this map unit.

In most years, this soil has a high water table between depths of 10 and 30 inches for more than 6 months and at a depth of less than 10 inches for 2 to 6 months. The available water capacity is low throughout. Permeability is rapid throughout. Natural fertility is low.

Native vegetation is scattered longleaf pine and slash pine. The understory includes waxmyrtle, St. Johnswort, pineland threeawn, and saw palmetto.

This Basinger soil has very severe limitations for cultivated crops because of wetness and poor soil quality. The adapted crops are limited unless very intensive conservation practices are used. If this soil is adequately drained and good conservation practices are applied, many vegetable crops can be grown. A water control system is needed to remove excess surface water in wet periods and to provide water for subsurface irrigation in dry periods. Row crops should be rotated with close-growing, soil-improving cover crops. Soil-improving cover crops should be included in the rotation system three-fourths of the time. Soil-improving cover crops and the residue of other crops should be used to maintain organic matter content and to control erosion. Seedbed preparation should include bedding of rows. Fertilizer and lime should be applied according to the need of the crops.

These soils are well suited to pasture. Pangolagrass and improved bahiagrass and white clover grow well when they are properly managed. A water control system is needed to remove excess surface water after heavy rains. Regular applications of fertilizers and lime are needed, and grazing should be controlled to maintain plant vigor.

Potential is moderate for the production of pine trees. Equipment use limitation and seedling mortality are the main concerns in management. A drainage system is needed to remove excess water if this soil's potential is to be realized. Slash pine is the preferred tree to plant for commercial wood production.

Typically, this soil is characterized by the Slough range site. This site can be identified by an open expanse of grasses, sedges, and rushes in an area where the soil is saturated during the rainy period. If grazing is controlled, forage production on this site is almost as high as that on the Freshwater Marshes and Ponds range site. Desirable forage plants on the Slough range site include blue maidencane, maidencane, chalky bluestem, toothachegrass, and South Florida bluestem. Carpetgrass, an introduced plant, tends to dominate the range site if the soil is overgrazed.

Wetness is a severe limitation for urban and recreational uses. This wetness limitation can be reduced or overcome by installing a drainage system to lower the high water table during wet periods. Seepage should be controlled before using this soil for sanitary facilities because of the possibility of pollution of water supplies. The sandy texture is a severe limitation for recreational use and causes poor trafficability in unpaved areas. A suitable topsoil fill material should be used or some other type of surface stabilization is needed to overcome this limitation.

This Basinger soil is in capability subclass IVw and in woodland suitability group 8W.

25—Kanapaha sand, bouldery subsurface. This soil is nearly level and is poorly drained. It is on low, broad flats and low knolls. The mapped areas are irregular in shape and range from 10 to 100 acres. Surface and subsurface boulders are approximately 60 to 250 feet apart. They occur randomly in small groups or individually. Although most boulders have been removed from the cropland and improved pasture, the remaining subsurface boulders can damage equipment that penetrates the soil. The slopes are smooth and range from 0 to 2 percent.

Typically, the surface layer is very dark gray sand about 6 inches thick. The upper part of the subsurface layer, to a depth of 33 inches, is grayish brown sand. The lower part, to a depth of about 45 inches, is light gray fine sand. The upper part of the subsoil, to a depth of 55 inches, is light gray sandy loam. The middle part, to a depth of 70 inches, is light brownish gray sandy clay loam. The lower part to a depth of about 80 inches is light brownish gray sandy loam.

Included with this soil in mapping are small areas of EauGallie, Pompano, and Sparr soils. The included soils make up about 15 percent of this map unit.

This soil has a high water table within 10 to 40 inches of the surface for 3 to 4 months and at a depth of less than 10 inches for 1 month to 3 months during most years. In drier periods, the water table recedes to a depth of more than 40 inches. The available water capacity is low. Permeability is rapid in the surface and subsurface layers and is moderately slow or slow in the subsoil. Natural fertility is low.

Native vegetation is sweetgum, live and water oaks, maple, magnolia, hickory, slash pine, longleaf pine, and loblolly pine. The understory includes hairy panicum, several varieties of bluestems and threeawns, and numerous forbs.

This Kanapaha soil has severe limitations for cultivated crops because of wetness and the thick, sandy texture. Boulders at or near the surface are a continuing nuisance during tillage operations. Most tillage operations are not impractical if the boulders are removed. Many vegetable crops can be grown on this soil if very intensive conservation practices and water control measures are used. A water control system is needed to remove excess surface water in wet periods and to provide water for subsurface irrigation in dry periods. Row crops should be rotated with close-growing, soil-improving cover crops. Soil-improving cover crops should be included in the rotation system three-fourths of the time. Conservation tillage helps to conserve moisture and controls erosion. Seedbed preparation should include bedding of the rows. Fertilizer and lime should be applied according to the need of the crops.

The soil is well suited to pasture. Pangolagrass, improved bahiagrass, and white clover grow well if they are properly managed. A water control system is needed to remove excess surface water after heavy rains. Regular applications of fertilizer and lime should be applied according to the need of the crops. Grazing should be controlled to maintain plant vigor. Boulders should be removed to help prevent equipment damage.

This soil has moderately high potential for the production of pine trees. The main concerns in management are the use of equipment when the soil is wet and undesirable plant competition. Seedling mortality is high. Slash, loblolly, and longleaf pines are the most suitable trees to plant for commercial wood production.

Typically, this soil is characterized by the Oak Hammock range site. This community is readily identified by the dense canopy cover of dominantly live oak trees. Cattle use these areas primarily for shade and resting areas because of the dense canopy and relatively open understory. Desirable forage includes longleaf uniola, low panicum, low paspalum, switchgrass, and lopsided indiangrass.

Wetness is a severe limitation for urban and recreational uses. This wetness limitation can be reduced or overcome by installing a drainage system to lower the high water table during wet periods. Mounding may be needed in places for septic tank absorption fields because of wetness and slow permeability. Random large boulders or groups of boulders may require use of a modified installation design or an alternate site in the map unit for many urban uses. The sandy texture is a severe limitation for recreational use and causes poor trafficability in unpaved areas. A suitable topsoil fill material should be used or some type of surface stabilization is needed to overcome this limitation.

This Kanapaha soil is in capability subclass IIIw and in woodland suitability group 10W.

26—Vero fine sand, bouldery subsurface. This soil is nearly level and is poorly drained. It is on broad flatwoods. The mapped areas are irregular in shape and range from 10 to 200 acres. Surface and subsurface boulders are approximately 60 to 250 feet apart. They occur randomly in small groups or individually. Although most boulders have been removed from cropland and improved pasture, the remaining subsurface boulders can damage equipment that penetrates the soil. The slopes are smooth and range from 0 to 2 percent.

Typically, the surface layer is black and dark gray fine sand about 7 inches thick. The subsurface layer, to a depth of about 13 inches, is light brownish gray fine sand. The next layer, to a depth of 15 inches, is a mixture of dark brown fine sand subsurface and subsoil material. The upper part of the subsoil, to a depth of 21 inches, is dark brown loamy fine sand. The next layer, to a depth of 30 inches, is grayish brown fine sandy loam that has mottles in shades of brown. The lower part, to a depth of 60 inches, is gray and light gray sandy clay that has mottles in shades of red and brown. The substratum to a depth of 80 inches or more is light gray sandy clay loam.

Included with this soil in mapping are small areas of EauGallie, Mabel, and Paisley soils. The included soils make up about 15 to 25 percent of this map unit.

In most years, this soil has a high water table between depths of 10 and 40 inches for more than 6 months. It is at a depth of less than 10 inches for 1 month to 4 months. The available water capacity is moderate. Permeability is rapid in the surface and subsurface layers and slow in the subsoil. Natural fertility is low.

Native vegetation is slash pine and longleaf pine. The understory includes saw palmetto, gallberry, waxmyrtle, and pineland threeawn.

This Vero soil has severe limitations for cultivated crops because of wetness. Boulders at or near the surface are a continuing nuisance during tilling operations. Most tilling operations are not impractical if the boulders are removed. The adapted crops are limited unless very intensive management practices are used. A water control system is needed to remove excess surface water in wet periods and to provide water for subsurface irrigation in dry periods. Row crops should be rotated with close-growing, soil-improving crops. Soil-improving cover crops should be included in the rotation system three-fourths of the time. Conservation tillage helps to conserve moisture and controls plant damage from blowing soil. Seedbed preparation should include bedding of the rows. Fertilizer and lime should be applied according to the need of the crops.

This soil is well suited to pasture and hay crops. Pangolagrass, bahiagrass, and clover are well adapted and grow well when they are properly managed. A drainage system is needed to remove excess surface water during heavy rains. These grasses and legumes need regular applications of fertilizers and lime. Grazing should be controlled to maintain plant vigor and to obtain high yields. Boulders should be removed to help prevent equipment damage.

The potential of this soil is moderately high for the production of pine trees. Equipment use limitations, seedling mortality, and plant competition are concerns in management. Slash and longleaf pines are the most suitable trees to plant for commercial wood production.

Typically, this soil is characterized by the South Florida Flatwoods range site. This site can be identified by scattered pine trees and an understory of saw palmetto and grasses. If grazing is controlled, the site has the potential to produce significant amounts of creeping bluestem, lopsided indiangrass, chalky bluestem, and various panicums. As range deterioration occurs because of overgrazing, the site is dominated by saw palmetto and pineland threeawn (wiregrass). Some areas of this soil support dense stands of oak trees. This soil provides good shade and resting areas for the cattle but provides insufficient grazing.

Wetness is a severe limitation for urban and recreational uses. This wetness limitation can be reduced or overcome by installing a drainage system to lower the high water table during wet periods. Mounding may be needed in places for septic tank absorption fields because of wetness and slow permeability. Random large boulders or groups of boulders may require the use of a modified installation design or an alternate site in the map unit for many urban uses. The sandy texture causes poor trafficability in unpaved areas and is a severe limitation for recreational use. A suitable topsoil fill material should be used or some type of surface stabilization is needed to overcome this limitation.

This Vero soil is in capability subclass IIIw and in woodland suitability group 11W.

27—Sumterville fine sand, bouldery subsurface, 0 to 5 percent slopes. This soil is nearly level to gently sloping and is somewhat poorly drained. It is on broad ridges and knolls on the uplands. The mapped areas are irregular in shape and range from 10 to 100 acres. Surface and subsurface boulders are approximately 30 to 150 feet apart. They occur randomly in small groups or individually. Although most boulders have been removed from the cropland and improved pasture, the remaining subsurface boulders can damage equipment that penetrates the soil. The slopes are convex.

Typically, the surface layer is dark gray fine sand about 9 inches thick. The subsurface layer, to a depth of about 29 inches, is light yellowish brown and very pale brown fine sand. The subsoil to a depth of about 80 inches is mottled light gray sandy clay.

Included with this soil in mapping are small areas of Mabel and Sparr soils. Also included are small isolated areas of Sumterville soils in the northeast part of the county that have no boulders. These soils are on the hilltops. The included soils make up about 20 percent of this map unit.

In most years, this soil has a high water table within 18 to 36 inches of the surface for 2 to 4 months and at a depth of less than 60 inches for more than 6 months. The available water capacity is moderate. Permeability is moderately rapid in the surface and subsurface layers and is slow in the subsoil and substratum. Natural fertility is low.

Native vegetation is slash and loblolly pines and live, laurel, water, and turkey oaks. The understory includes waxmyrtle, briers, and native grasses.

This Sumterville soil has moderate limitations for cultivated crops because of wetness. Boulders at or near the surface are a continuing nuisance during tillage operations. Most tillage operations are not impractical if the boulders are removed. The number of adapted crops is limited. With adequate drainage, these soils are suitable for most crops. A water control system is needed to remove excess surface water rapidly and to provide water for subsurface irrigation. Close-growing cover crops should be included in the rotation system at least two-thirds of the time. Soil-improving cover crops and the residue of other crops should be returned to the soil. Conservation tillage helps to conserve moisture and controls erosion. Other important conservation practices are good seedbed preparation and proper bedding of rows. Fertilizer and lime should be applied according to the need of the crop.

This soil is well suited to pasture. Pangolagrass, bahiagrass, and clover are well adapted to this soil. Good pastures of grass or a mixture of grass and clover can be grown with proper management. Regular applications of fertilizer and lime and controlled grazing are required to obtain high yields. Boulders should be removed to help prevent equipment damage.

Potential is moderately high for the production of pine trees. Equipment use and seedling mortality are moderate to severe limitations to use of this soil as woodland. Slash, loblolly, and longleaf pines are most suitable trees to plant for commercial wood production.

Typically, this soil is characterized by the Oak Hammock range site. This community is readily identified by the dense canopy cover of dominantly live oak trees. Cattle use these areas primarily for shade and resting areas because of the dense canopy and relatively open understory. Desirable forage includes longleaf uniola, low panicum, low paspalum, switchgrass, and lopsided indiangrass.

This soil has slight to moderate limitations for most urban uses. Wetness is a severe limitation to use of this soil as septic tank absorption fields, sewage lagoons, and sanitary landfills. Random large boulders or groups of boulders may require use of a modified installation design or an alternate site in the map unit for many urban uses.

This Sumterville soil is in capability subclass IIw and in woodland suitability group 12A.

28—Seffner fine sand. This soil is nearly level and is somewhat poorly drained. It is on low, broad flats and low knolls. The mapped areas are irregular in shape and range from 50 to 150 acres. The slopes are smooth and range from 0 to 2 percent.

Typically, the surface layer is dark brown fine sand about 12 inches thick underlain by dark brown and brown fine sand to a depth of about 18 inches. The upper part of the underlying material, to a depth of about 33 inches, is brown fine sand. The middle part, to a depth of 55 inches, is light gray fine sand that has mottles in shades of yellow. The lower part to a depth of 80 inches or more is white fine sand.

Included with soil in mapping are small areas of Adamsville, Florahome, Ona, Pompano, and Sparr soils. Also included are some small areas of soils that have an organic stain at a depth of more than 70 inches, and areas of Seffner soils that have random boulders in the soil. These areas are adjacent to a map unit that has a bouldery subsurface layer. The included soils make up about 20 to 25 percent of this map unit.

In most years, this soil has a high water table within 20 to 40 inches of the surface for 2 to 6 months and at a depth of less than 60 inches for more than 9 months. It is at a depth of 10 to 20 inches for about 2 weeks in some years. The available water capacity is low. Permeability is rapid throughout. Natural fertility is low.

Native vegetation is pine, laurel oak, and water oak. The understory includes saw palmetto, pineland threeawn, indiangrass, bluestem grasses, and several low panicums.

This Seffner soil has severe limitations for cultivated crops because of periodic wetness. The adapted crops are very limited unless intensive water control measures are used. A water control system is needed to remove excess surface water in wet periods and provide water for subsurface irrigation in dry periods. With adequate drainage, this soil is well suited to many kinds of flowers and vegetables (fig. 7). Good conservation practices, in addition to water control measures, should be used if the soil is cultivated. Close-growing cover crops should be included in the rotation system at least two-thirds of the time. Soil-improving cover crops and the residue of the other crops should be returned to the soil to maintain organic matter content and protect the soil from erosion. Fertilizer and lime should be applied according to the need of the crops.

This soil is well suited to pasture. Pangolagrass and bahiagrass are well adapted to this soil. A drainage system is needed to remove excess surface water during heavy rains. These grasses also need regular applications of fertilizer. In some areas, this soil responds well to lime. Grazing should be controlled to maintain plant vigor and to obtain maximum yields.

Potential is moderately high for the production of pine trees. Equipment use, seedling mortality, and plant competition are the main concerns in management. Slash and longleaf pines are the most suitable trees to plant for commercial wood production.

Typically, this soil is characterized by the Oak Hammock range site. This community is readily identified by the dense canopy cover of dominantly live oak trees. Cattle use these areas primarily for shade and resting areas because of the dense canopy and relatively open understory. Desirable forage includes longleaf uniola, low panicum, low paspalum, switchgrass, and lopsided indiangrass.

Wetness is a severe limitation for urban and recreation uses. This wetness limitation can be reduced or overcome by installing a drainage system to lower the high water table during wet periods. Mounding may be needed in places for septic tank absorption fields because of wetness. The sandy texture is a severe limitation for recreational use and causes poor trafficability in unpaved areas. A suitable topsoil fill material should be used or some type of surface stabilization is needed to overcome this limitation.

This Seffner soil is in capability subclass IIIw and in woodland suitability group 11W.

29—Nittaw muck, frequently flooded. This soil is nearly level and is very poorly drained. It is in hardwood swamps on the lake and river flood plains. The mapped areas are irregular in shape and range from 100 to 1,500 acres. The slopes are smooth and range from 0 to 1 percent.

Typically, the surface layer is dark reddish brown muck about 5 inches thick and is underlain by very dark grayish brown fine sand to a depth of 12 inches. The subsoil, to a depth of about 65 inches, is very dark gray and gray sandy clay and clay. The substratum to a depth of 80 inches or more is light gray loamy fine sand.

Included with this soil in mapping are small areas of Floridana, Gator, and Terra Ceia soils. Also included are areas of Nittaw soils that have random boulders. These areas are adjacent to a map unit that has a bouldery subsurface layer. The included soils make up about 25 percent of this map unit.

This soil is frequently flooded for very long periods. The available water capacity is high. Permeability is moderately rapid in the surface layer and is slow in the subsoil. Natural fertility is moderate.

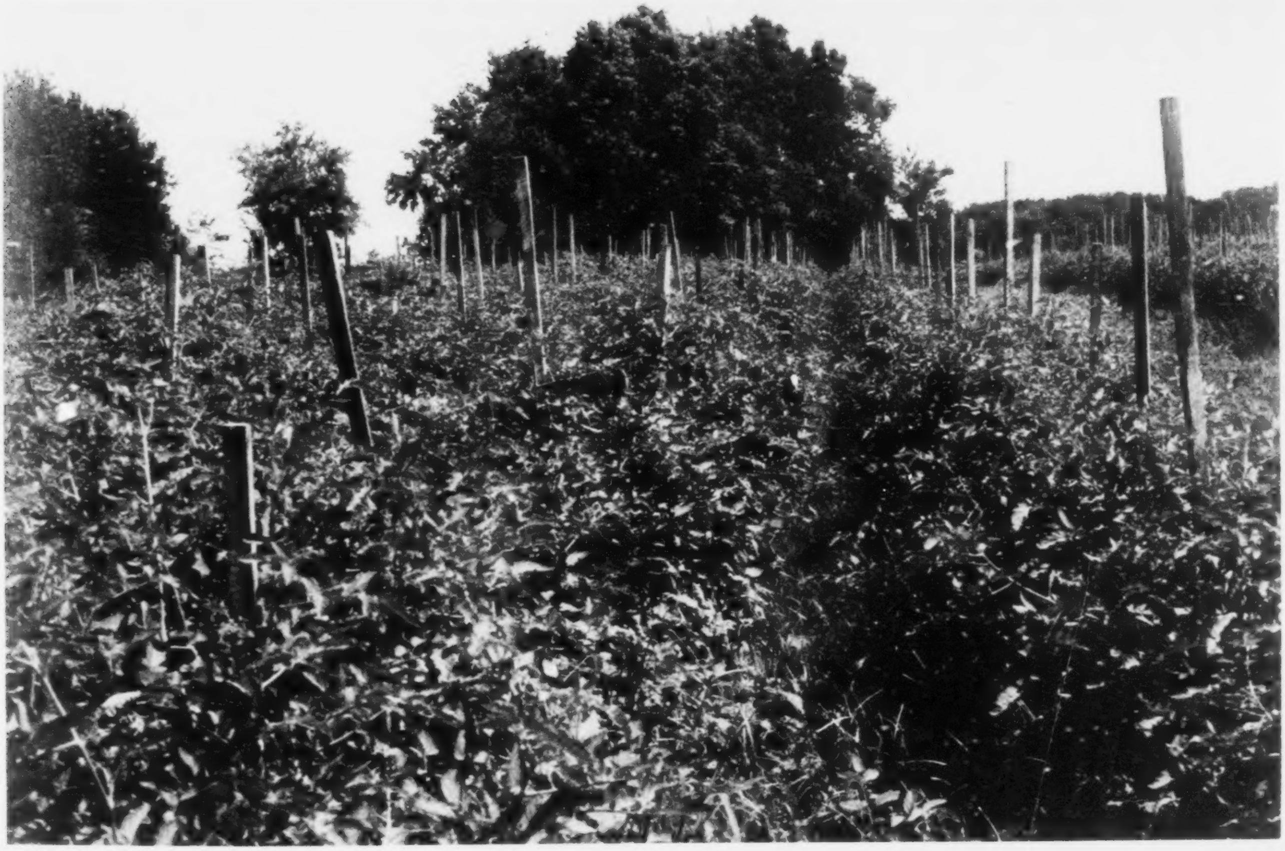

Figure 7.—Tomatoes grow well on Seffner fine sand if the soil is adequately drained.

Native vegetation is baldcypress, cabbage palms, and various hardwood trees. The understory includes aquatic plants, greenbrier, and poison ivy.

In its natural state, this Nittaw soil is not suited to cultivated crops because of flooding and wetness and a slowly permeable clayey subsoil. These limitations can be overcome only if a major flood control system or a land drainage system is provided. With adequate drainage, important crops, such as corn and soybeans, can be grown. A water control system is needed to remove excess surface water rapidly after heavy rains and provide rapid subsurface drainage. Seedbed preparation should include the bedding of rows. Close-growing, soil-improving cover crops should be included in the cropping system at least two-thirds of the time. All crop residue should be used to maintain organic matter content and protect the soil from erosion. Fertilizer should be applied according to the need of the crops.

In its natural state, this soil is not suited to pasture and hay crops; but if a drainage system and flood control system is provided, it is well suited to this use. Coastal bermudagrass, bahiagrass, and white clover grow well if good management practices are used. Fertilizer is needed. Grazing should be controlled to maintain plant vigor and to obtain high yields.

In its natural state, this soil is not suited to pine trees because of flooding and wetness. If these limitations can be overcome, the potential then becomes high. Severe equipment use limitations and seedling mortality are concerns in management. Slash and loblolly pine are the most suitable trees to plant for commercial tree production.

This Nittaw soil has not been assigned to a range site.

Flooding and wetness are severe limitations for all urban uses. In addition, the shrink-swell potential of this soil is a limitation to use for building site development. The slow percolation of the soil limits its use as septic tank absorption fields.

This Nittaw soil is in capability subclass Vw and in woodland suitability group 6W.

30—Placid fine sand, depressional. This soil is nearly level and is very poorly drained. It is in depressional areas and in poorly defined drainageways that pond. The mapped areas are irregular in shape and range from 20 to 100 acres. The slopes are concave and range from 0 to 2 percent.

Typically, the surface layer is black fine sand about 10 inches thick underlain by very dark gray fine sand to a depth of about 16 inches. The underlying material, to a depth of about 28 inches, is grayish brown fine sand and to a depth of 80 inches or more is white fine sand.

Included with this soil in mapping are small areas of Basinger, Myakka, Ona, and Pompano soils. Also included are some areas of soils that have loamy layers at a depth of more than 60 inches. The included soils make up about 20 percent of this map unit.

This soil has water above the surface for 6 to 8 months. The available water capacity is moderate. Permeability is rapid throughout. Natural fertility is moderate.

Native vegetation is pickerelweed, maidencane, and various aquatic plants.

In its natural state, this Placid soil is not suited to cultivated crops because of ponding (fig. 8). With adequate drainage, Placid soil is well suited to many high-value crops. A water control system is needed to remove excess water rapidly during heavy rains. If the soil is cultivated, conservation practices, such as good seedbed preparation, proper arrangement of rows, crop rotation, and regular applications of fertilizer, should be used. Cover crops should be included in the rotation system two-thirds of the time. Cover crops and the residue of other crops should be used to help maintain tilth and to control erosion.

In its natural state, this soil is not suited to pasture because of ponding. With adequate drainage, it is well suited to such plants as pangolagrass, bahiagrass, and clover. A drainage system is needed to remove excess surface water. These grasses and legumes grow well if they are properly fertilized and limed. Grazing should be

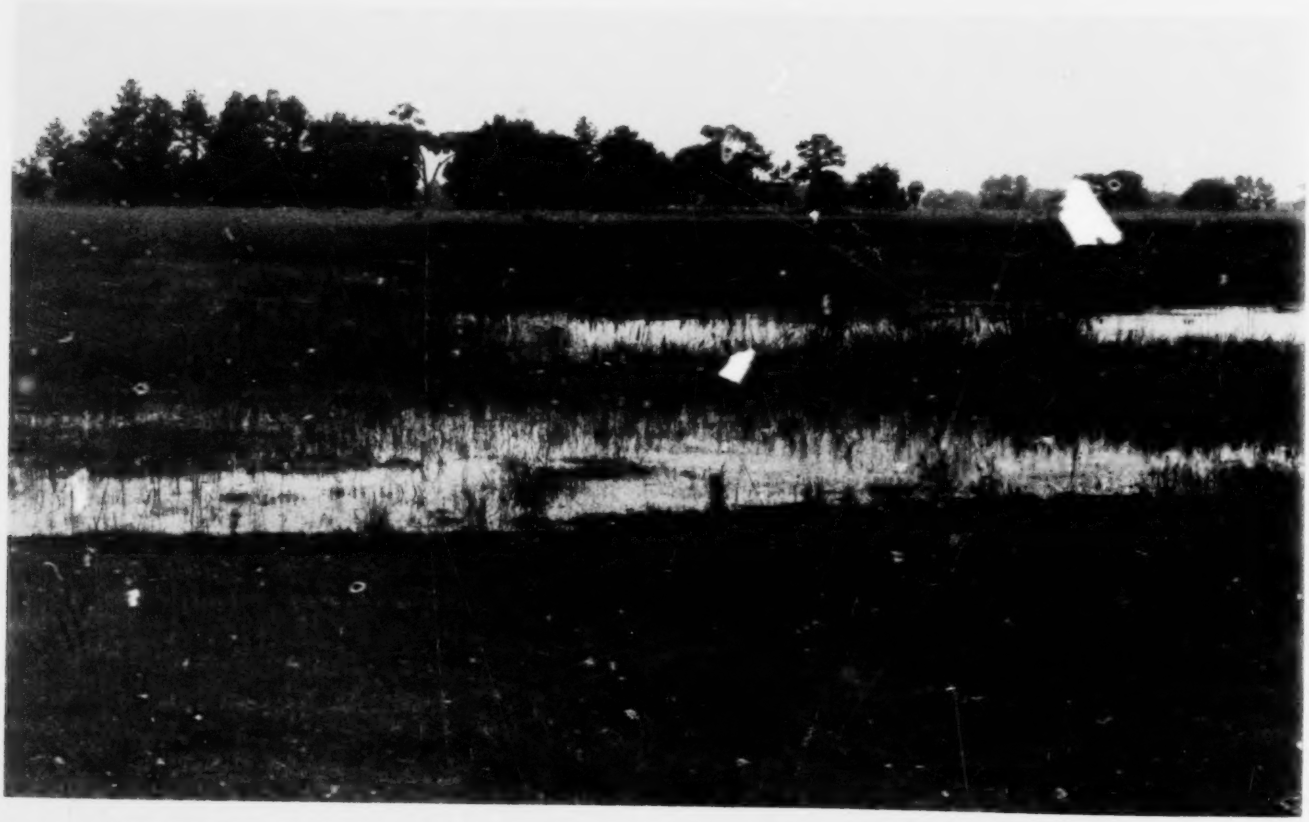

Figure 8.—Ponded areas are common in the lower parts of Sumter County. The soil is Placid fine sand, depressional.

controlled to maintain plant vigor and to obtain maximum yields.

This soil is not suited to pine trees because of ponding.

Typically, this soil is characterized by the Freshwater Marshes and Ponds range site. This site can be identified by an open expanse of grasses, sedges, rushes, and other herbaceous plants. If grazing is controlled, this range site has the potential to produce more forage than any of the other range sites. Chalky bluestem and blue maidencane dominate the drier parts of the range site, and maidencane is the dominant plant in the wetter parts. Other desirable forage includes cutgrass, bluejoint panicum, sloughgrass, and low panicum. Periodic high water levels provide natural deferment from cattle grazing. Carpetgrass, an introduced plant, tends to dominate the drier parts of the range site if the soil is overgrazed. Some areas that support dense stands of hardwood or cypress trees are poorly suited to rangeland.

Ponding is a severe limitation for urban and recreational uses. This limitation can be overcome by installing a drainage system to lower the high water table during wet periods and by using a suitable fill material in the depressions. Seepage should be controlled before using this soil for sanitary facilities because of the possibility of pollution of water supplies. The sandy texture is a severe limitation for recreational use and causes poor trafficability in unpaved areas. A suitable topsoil fill material should be used or some other type of surface stabilization is needed to overcome this limitation.

This Placid soil is in capability subclass VIIw and in woodland suitability group 6W.

31—Myakka sand. This soil is nearly level and is poorly drained. It is on broad areas on the flatwoods. The mapped areas are irregular in shape and range from 20 to 200 acres. The slopes are smooth to concave and range from 0 to 2 percent.

Typically, the surface layer is black sand about 6 inches thick. The subsurface layer, to a depth of about 25 inches, is gray sand and fine sand. The upper part of the subsoil, to a depth of about 31 inches, is black fine sand. The lower part, to a depth of 40 inches, is dark brown fine sand. It is weakly cemented in a few places. The upper part of the substratum, to a depth of 51 inches, is light brownish yellow fine sand. The lower part to a depth of 80 inches or more is light gray fine sand.

Included with this soil in mapping are small areas of Adamsville, Basinger, EauGallie, Ona, and Smyrna soils. Also included are areas of Myakka soils that have random boulders. These areas are adjacent to a map unit that has a bouldery subsurface layer. These soils are generally south of the Jumper Creek Swamp area. The included soils make up about 20 percent of this map unit.

In most years, this soil has a high water table within 10 inches of the surface for 1 month to 4 months and recedes to a depth of more than 40 inches during very dry periods. The available water capacity is low. Permeability is rapid in the surface layer, subsurface layer, and substratum and is moderate or moderately rapid in the subsoil. Natural fertility is low.

Native vegetation is longleaf pine and slash pine. The understory includes saw palmetto, running oak, gallberry, waxmyrtle, huckleberry, pineland threeawn, and scattered fetterbush.

This Myakka soil has very severe limitations for cultivated crops because of wetness and poor soil quality. The adapted crops are limited unless very intensive management practices are used. With a good water control system and soil-improving measures, this soil is suited to many vegetable crops. A water control system is needed to remove excess surface water in wet periods and to provide water for subsurface irrigation in dry periods. Row crops should be rotated with close-growing, soil-improving cover crops. Soil-improving cover crops should be included in the rotation system three-fourths of the time. Soil-improving cover crops and residue from other crops should be used to maintain organic matter content and to control erosion. Seedbed preparation should include bedding of the rows. Fertilizer and lime should be applied according to the need of the crops.

This soil is well suited to pasture. Pangolagrass, bahiagrass, and clover are well adapted to this soil and grow well if properly managed. A water control system is needed to remove excess surface water during heavy rains. To obtain high yields, regular applications of fertilizer are needed. Grazing should be controlled to maintain plant vigor.

This soil has moderate potential for the production of pine trees. Equipment use limitations and seedling mortality are the main concerns in management. A drainage system is needed to remove the excess water if the potential of this soil is to be realized. Slash pine is the preferred tree to plant.

Typically, this soil is characterized by the South Florida Flatwoods range site. This site can be identified by scattered pine trees and an understory of saw palmetto and grasses. If grazing is controlled, the site has the potential to produce significant amounts of creeping bluestem, lopsided indiangrass, chalky bluestem, and various panicums. As range deterioration occurs because of overgrazing, the site is dominated by saw palmetto and pineland threeawn (wiregrass).

Wetness is a severe limitation for urban and recreational uses. This wetness limitation can be reduced or overcome by installing a drainage system to lower the high water table during wet periods. Seepage should be controlled before using this soil for sanitary facilities because of the possibility of pollution of water supplies. The sandy texture is a severe limitation for recreational use and causes poor trafficability in unpaved areas. A suitable topsoil fill material should be used or some other type of surface stabilization is needed to overcome this limitation.

This Myakka soil is in capability subclass IVw and in woodland suitability group 9W.

32—Pompano fine sand. This soil is nearly level and is poorly drained. It is on broad, low flats and in poorly defined drainageways. The mapped areas are irregular in shape and range from 10 to 100 acres. The slopes are 0 to 2 percent.

Typically, the surface layer is very dark gray fine sand about 5 inches thick and is underlain by dark grayish brown fine sand to a depth of about 15 inches. The underlying material to a depth of 80 inches or more is pale brown and light gray fine sand.

Included with this soil in mapping are small areas of Adamsville, Basinger, and Placid soils. Also included are areas of Pompano soils that have random boulders. These areas are adjacent to a map unit that has a bouldery surface layer. These soils are generally south of the Jumper Creek Swamp area. The included soils make up about 20 percent of this map unit.

In most years, this soil has a high water table between depths of 10 and 30 inches for more than 6 months and at a depth of less than 10 inches for 2 to 6 months. The available water capacity is very low. Permeability is very rapid. Natural fertility is very low.

Native vegetation is water oak, sweetgum, and slash pine. The understory includes gallberry, saw palmetto, and native grasses.

This Pompano soil has very severe limitations for cultivated crops because of wetness and poor soil quality. The adapted crops are limited unless very intensive management practices are used. With adequate drainage and the use of good conservation practices, this soil is suited to many vegetable crops. A water control system is needed to remove excess surface water in wet periods and to provide water for subsurface irrigation in dry periods. Row crops should be rotated with close-growing, soil-improving cover crops. Soil-improving cover crops should be included in the rotation system three-fourths of the time. Crop residue and soil-improving crops should be used to maintain organic matter content and control erosion. Seedbed preparation should include bedding of the rows. Fertilizer and lime should be applied according to the need of the crops.

This soil is well suited to pasture. Pangolagrass and improved bahiagrass and white clover grow well when they are properly managed. A water control system is needed to remove excess surface water after heavy rains. To obtain maximum yields, regular applications of fertilizer and lime are needed, and grazing should be controlled to maintain plant vigor.

This soil has moderate potential for the production of pine trees. Equipment use limitations and plant competition are the main concerns in management. Seedling mortality is moderate. A drainage system and bedding of the trees are needed if this soil's potential is to be realized. Slash pine is the preferred tree to plant for commercial wood production.

Typically, this soil is characterized by the Slough range site. This site can be identified by an open expanse of grasses, sedges, and rushes in an area where the soil is saturated during the rainy periods. If grazing is controlled, forage production on this site is almost as high as that on the Freshwater Marshes and Ponds range site. Desirable forage plants are blue maidencane, maidencane, chalky bluestem, toothachegrass, and South Florida bluestem. Carpetgrass, an introduced plant, tends to dominate the range site if the soil is overgrazed.

Wetness and seepage are severe limitations for urban and recreational uses. This wetness limitation can be reduced or overcome by installing a drainage system to lower the high water table during wet periods. Seepage should be controlled before using this soil for sanitary facilities because of the possibility of pollution of water supplies. The sandy texture is a severe limitation for recreation use and causes poor trafficability in unpaved areas. A suitable topsoil fill material should be used or some other type of surface stabilization is needed to overcome this limitation.

This Pompano soil is in capability subclass IVw and in woodland suitability group 8W.

33—Sparr fine sand, bouldery subsurface, 0 to 5 percent slopes. This soil is nearly level to gently sloping and is somewhat poorly drained. It is on broad, low ridges and knolls. The mapped areas mostly are irregular in shape and are approximately 20 to 100 acres. Surface and subsurface boulders are approximately 60 to 250 feet apart. They occur randomly in small groups or individually. Although most boulders have been removed from the cropland and improved pasture, the remaining subsurface boulders can damage equipment that penetrates the soil. The slopes are generally convex.

Typically, the surface layer is gray fine sand about 8 inches thick. The subsurface layer, to a depth of about 46 inches, is gray and very pale brown fine sand that has yellow mottles. The upper part of the subsoil, to a depth of about 58 inches, is light brownish yellow sandy clay loam that has gray and brown mottles. The lower part to a depth of 80 inches or more is gray sandy clay that has yellowish red mottles.

Included with this soil in mapping are small areas of Adamsville, EauGallie, Mabel, and Millhopper soils. Also included are areas of soils that are somewhat poorly drained but are loamy within 40 inches of the surface layer, and some areas of soils that have a weak stain above the loamy layer. The included soils make up about 25 percent of this map unit.

This soil has a high water table within 20 to 40 inches of the surface for 1 month to 4 months. The available water capacity is low. The available water capacity is low in the surface and subsurface layers and medium in the subsoil. Permeability is rapid in the surface and subsurface layers and is slow or moderately slow in the subsoil. Natural fertility is low.

Native vegetation is water, live, and scrub oaks. The understory includes pineland threeawn, scattered saw palmetto, and greenbrier.

This Sparr soil has severe limitations for cultivated crops because of periodic wetness and poor soil qualities. Boulders at or near the surface are a continuing nuisance during tillage operations. Most tillage operations are not impractical if the boulders are removed. During wet periods, the high water table can cause some retardation of root development. A properly designed drainage system can eliminate this problem. With good management and a water control system, the soil is adapted to most locally grown crops. Good conservation practices, such as growing row crops in rotation with the close-growing, soil-improving cover crops, including close-growing cover crops in the rotation system at least two-thirds of the time, returning crop residue to the soil, and applying fertilizer and lime, should be used on this soil. Conservation tillage helps to control erosion and conserves moisture.

This soil is well suited to pasture. Good pastures of grass or a mixture of grass and clover can be grown with proper management. This soil is well suited to pangolagrass, bahiagrass, and clover (fig. 9). To obtain high yields, regular applications of fertilizers and lime are needed and grazing should be controlled. Boulders should be removed to help prevent equipment damage.

Potential for the production of pine trees on this soil is moderately high. Equipment use and seedling mortality are moderate limitations to use of this soil as woodland. Slash, loblolly, and longleaf pines are the most suitable trees to plant for commercial wood production.

Typically, this soil is characterized by the Oak Hammock range site. This community is readily identified by the dense canopy cover of dominantly live oak trees. Cattle use these areas primarily for shade and resting areas because of the dense canopy and relatively open understory. Desirable forage includes longleaf uniola, low

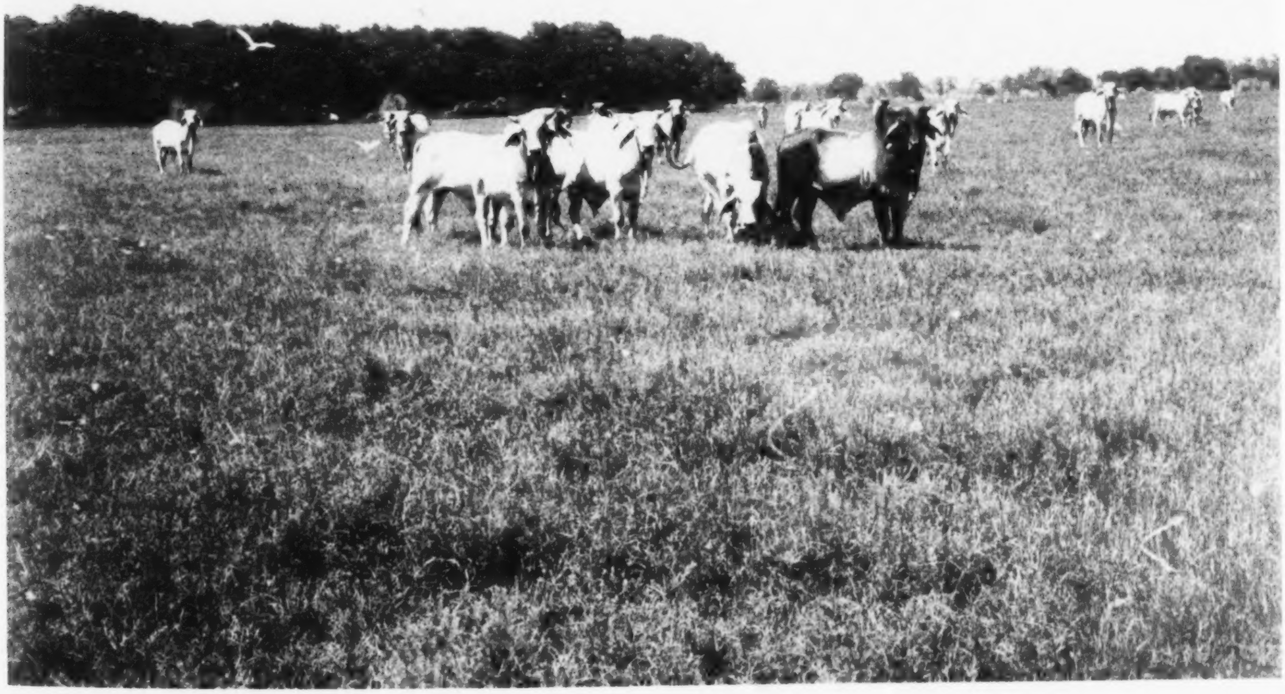

Figure 9.—Pasture grasses grow well on this Sparr fine sand, bouldery subsurface, 0 to 5 percent slopes.

panicum, low paspalum, switchgrass, and lopsided indiangrass.

This soil has moderate limitations to use as sites for homes and small commercial buildings and for local roads and streets. The depth of the high water table during wet periods is a severe limitation to use of this soil as septic tank absorption fields and sanitary landfills. Random large boulders or groups of boulders may require use of a modified installation design or an alternate site in the map unit for many urban uses. The sandy texture is a severe limitation for recreational use and causes poor trafficability in unpaved areas. A suitable topsoil fill material should be used or some other form of surface stabilization is needed to reduce or overcome this limitation.

This Sparr soil is in capability subclass IIIs and in woodland suitability group 10S.

34—Tarrytown sandy clay loam, bouldery subsurface. This soil is nearly level and is somewhat poorly drained. It is on low, broad flats that are slightly higher than the adjacent depressed areas. The mapped areas are irregular in shape and range from 20 to 100 acres. Surface and subsurface boulders are approximately 30 to 150 feet apart. They occur randomly in small groups or individually. Although most boulders have been removed from the cropland and improved pasture, the remaining subsurface boulders can damage equipment that penetrates the soil. The slopes are smooth and range from 0 to 2 percent.

Typically, the surface layer is dark grayish brown sandy clay loam about 7 inches thick. The subsoil, to a depth of 14 inches, is dark yellowish brown and yellowish brown sandy clay loam. The upper part of the substratum, to a depth of about 22 inches, is light gray and light yellowish brown, calcareous, clay loam. The middle part, to a depth of 50 inches, is white loam containing shell fragments. The lower part to a depth of about 80 inches is mixed, light gray and brownish yellow fine sand.

Included with this soil in mapping are small areas of Mabel and Paisley soils. The included soils make up about 15 percent of this map unit.

During most years, this soil has a high water table between depths of 12 and 24 inches for 1 month to 3 months. The available water capacity is moderate. Permeability is moderate in the surface layer and in the subsoil and is slow in the substratum to a depth of about 50 inches and is rapid to a depth of 80 inches or more. Natural fertility is low.

Native vegetation is mostly live oak, water oak, elm, and cabbage palm. The understory includes saw palmetto and greenbrier.

This Tarrytown soil has moderate limitations for cultivated crops because of wetness. Boulders at or near the surface are a continuing nuisance during tillage operations. Most tillage operations are not impractical if the boulders are removed. This soil is well suited to some cultivated crops, but a high water table in the root zone limits the kinds of crops that can be grown. Crops, such as cabbage, peanuts and tomatoes, can be grown if the soil is adequately drained. Surface irrigation must be used during dry periods. A close-growing cover crop should be included in the rotation system at least one-half of the time. Soil-improving cover crops and the residue of other crops should be used to maintain organic matter, which prevents hardening of the surface layer. High crop yields require good seedbed preparation that includes bedding of the rows and proper applications of fertilizer and lime.

This soil is well suited to pasture and hay crops. Grasses, such as Coastal bermudagrass and the improved bahiagrasses, are well adapted to this soil, and white clover and other legumes are moderately well suited. To obtain maximum yields, regular applications of fertilizer and lime are needed, and grazing should be controlled to maintain plant vigor and ground cover. Boulders should be removed to help prevent equipment damage.

This soil has high potential for the production of pine trees. Plant competition and equipment use limitations are moderate concerns in management. Slash, loblolly, and longleaf pines are the most suitable trees to plant for commercial wood production.

Typically, this soil is characterized by the Oak Hammock range site. This community is readily identified by the dense canopy cover of dominantly live oak trees. Cattle use these areas mainly for shade and resting areas because of the dense canopy cover and relatively open understory. Desirable forage includes longleaf uniola, low panicum, low paspalum, switchgrass, and lopsided indiangrass.

Wetness is a severe limitation for urban and recreational uses. This limitation can be reduced or overcome by installing a drainage system to lower the high water table during wet periods. Mounding may be needed in places for septic tank absorption fields because of wetness. Random large boulders or groups of boulders may require use of a modified installation design or an alternate site in the map unit for many urban uses.

This Tarrytown soil is in capability subclass IIw and in woodland suitability group 11W.

35—Pompano fine sand, depressional. This soil is nearly level and is very poorly drained. It is in depressional areas. The mapped areas are irregular in shape and range from 5 to 100 acres. The slopes are smooth to concave and range from 0 to 2 percent.

Typically, the surface layer is black fine sand about 9 inches thick underlain by pale and dark grayish brown fine sand to a depth of about 12 inches. The upper part of the underlying material, to a depth of about 40 inches, is light yellowish brown fine sand, and the lower part to a depth of 80 inches or more is light gray and white fine sand.

Included with this soil in mapping are small areas of Basinger, Floridana, and Placid soils that have an organic surface layer. The included soils make up about 15 percent of this map unit.

This soil is ponded for 6 to 8 months. The available water capacity is low. Permeability is rapid. Natural fertility is low.

Native vegetation is mostly cypress, gum, and willow trees. The understory includes creeping bluestem, waxmyrtle, and panicum.

In its natural state, this Pompano soil is not suited to cultivated crops or pasture. Water stands on the surface of this soil for long periods. An adequate drainage system is difficult to establish in many places because suitable outlets are not available.

This soil is not suited to pine tree production. Planting is feasible only with adequate surface drainage. Slash pine is the preferred tree to plant for commercial wood production if drainage can be provided.

Typically, this soil is characterized by the Freshwater Marshes and Ponds range site. This site can be identified by an open expanse of grasses, sedges, rushes, and other herbaceous plants. If grazing is controlled, this range site has the potential to produce more forage than any of the other range sites. Chalky bluestem and blue maidencane dominate the drier parts of the range site, and maidencane is the dominant plant in the wetter parts. Other desirable forage includes cutgrass, bluejoint panicum, sloughgrass, and low panicums. Periodic high water levels provide natural deferment from cattle grazing. Carpetgrass, an introduced plant, tends to dominate the drier parts of the range site if the soil is overgrazed. Some areas that are dominated by dense stands of hardwood or cypress trees are poorly suited to rangeland.

Ponding is a severe limitation for urban and recreational uses. The sandy texture, poor filtering capacity, and seepage are additional limitations for some urban uses. Urban and recreational uses of this soil are rare because the ponding limitation is difficult to overcome.

This Pompano soil is in capability subclass VIIw and in woodland suitability group 6W.

36—Floridana mucky fine sand, depressional. This soil is nearly level and is very poorly drained. It is in wet, depressional areas. The mapped areas are both elongated and irregular in shape and range from 10 to 200 acres. The slopes are smooth and are less than 2 percent.

Typically, the surface layer is black mucky fine sand about 4 inches thick underlain by very dark gray fine sand to a depth of about 12 inches. The subsurface layer, to a depth of about 25 inches, is dark grayish brown and light brownish gray fine sand. The subsoil to a depth of 80 inches or more is light brownish gray and grayish brown sandy clay loam that has mottles in shades of brown and yellow.

Included with this soil in mapping are small areas of Gator and Placid soils. Also included are soils that are similar to Floridana soil but have loamy or clayey layers within 20 inches of the surface layer. The included soils make up about 15 percent of this map unit.

This soil is ponded for more than 6 months during most years. The available water capacity is moderate. Permeability is rapid in the surface layer and is slow or very slow in the subsoil. Natural fertility is moderate.

Native vegetation is cypress, cattails, and dense stands of pickerelweed, maidencane, and sawgrass.

In its natural state, this Floridana soil is not suited to cultivated crops because of wetness. However, if a good water control system is provided, this soil is well suited to many locally grown, high-value crops. A water control system is needed to remove excess water rapidly during heavy rains. Also good conservation practices should be used, such as good seedbed preparation, crop rotation, and timely applications of fertilizer and lime. Cover crops should be rotated with row crops. Soil-improving cover crops should be included in the rotation system two-thirds of the time. Soil-improving cover crops and the residue of other crops should be used to maintain organic matter content.

In its natural state, this soil is not suited to improved pasture grasses and legumes because of ponding. If an adequate drainage system can be provided to remove excess surface water after heavy rains, pangolagrass, bahiagrass, and clover grow well. To obtain maximum yields, fertilizer and lime should be applied according to the need of the crops. Grazing should be controlled to maintain plant vigor.

This soil is not suited to pine trees because of ponding. The use of equipment in these areas is difficult, and seedlings would not survive. If a good water control system is installed to remove the excess water, then trees can be planted. Slash and loblolly pines are the most suitable trees to plant if long term drainage can be provided.

Typically, this soil is characterized by the Freshwater Marshes and Ponds range site. This site can be identified by an open expanse of grasses, sedges, rushes, and other herbaceous plants. If grazing is controlled, this range site has the potential to produce more forage than any of the other range sites. Chalky bluestem and blue maidencane dominate the drier parts of this range site, and maidencane is the dominant plant in the wetter parts. Other desirable forage includes cutgrass, bluejoint panicum, sloughgrass, and low panicum. Periodic high water levels provide natural deferment from cattle grazing. Carpetgrass, an introduced plant, tends to dominate the drier parts of the range site if the soil is overgrazed. Some areas that support dense stands of hardwood or cypress trees are poorly suited to rangeland.

This soil is not suited to urban and recreational uses because of ponding. This wetness limitation can be reduced or overcome by installing a drainage system to lower the high water table to an acceptable depth or by adding suitable fill material in the depressions. The sandy texture is a severe limitation for recreational use and causes poor trafficability in unpaved areas. A suitable topsoil fill material should be used or some other type of surface stabilization is needed to overcome this limitation.

This Floridana soil is in capability subclass VIIw and in woodland suitability group 6W.

37—Astatula fine sand, 0 to 8 percent slopes. This soil is nearly level to moderately sloping and is excessively drained. It is on the sandhills. The mapped areas follow the contour of the sandhills and range from 60 to 500 acres. The slopes are convex and range from 0 to 8 percent.

Typically, the surface layer is dark gray fine sand about 5 inches thick. The upper part of the underlying material, to a depth of about 47 inches, is light yellowish brown, pale brown, and yellow fine sand. The lower part to a depth of 80 inches or more is very pale brown fine sand.

Included with this soil in mapping are small areas of Candler, Lake, and Tavares soils. Also included are areas of Astatula soils that have random boulders. These areas are adjacent to a map unit that has a bouldery subsurface layer. The included soils make up about 20 percent of this map unit.

This soil does not have a high water table within 80 inches of the surface. The available water capacity is very low. Permeability is very rapid. Natural fertility is very low.

Native vegetation is sand pine and turkey oak. The understory includes scattered saw palmetto, pineland threeawn, bluestem, and rosemary.

This Astatula soil has very severe limitations for cultivated crops. Droughtiness and rapid leaching of plant nutrients are the main limitations.

This soil is moderately suited to pasture. Grasses, such as pangolagrass and bahiagrass, respond fairly well to regular applications of fertilizer.

The potential of this soil is low for the production of pine trees. Equipment use and seedling mortality are concerns in management. Sand pines are the preferred trees to plant.

Typically, this soil is characterized by the Sand Pine Scrub range site. This site can be identified by a fairly dense stand of sand pine trees and a dense understory of oaks, saw palmetto, and other shrubs. Depending on past timber management practices, the sand pines may not be present. The droughty nature of this soil limits the soil's potential for producing native forage. If grazing is controlled, the site has the potential to produce limited amounts of lopsided indiangrass, creeping bluestem, and switchgrass. Livestock generally do not use this range site if more productive sites are available. The community provides summer shade, winter protection, and a dry resting area during the wet periods.

This soil has slight limitations for most urban uses. Seepage is a severe limitation to use of this soil for sewage lagoons or sanitary landfills. If used for sewage lagoons or sanitary landfills, the floor and sidewalls should be sealed. The sandy texture is a severe limitation for recreational use and causes poor trafficability in unpaved areas. A suitable topsoil fill material should be used or some form of surface stabilization is needed to reduce or overcome this limitation.

This Astatula soil is in capability subclass VIs and in woodland suitability group 3S.

39—Mabel fine sand, bouldery subsurface, 0 to 5 percent slopes. This soil is nearly level to gently sloping and is somewhat poorly drained. It is on broad ridges and knolls on the flatwoods. The mapped areas mostly follow the contour of the ridges and knolls and are 10 to 200 acres. Surface and subsurface boulders are about 30 to 150 feet apart. They occur randomly in small groups or individually. Although most boulders have been removed from the cropland and improved pasture, the remaining subsurface boulders can damage equipment that penetrates the soil. The slopes are convex.

Typically, the surface layer is dark gray fine sand about 6 inches thick. The subsurface layer, to a depth of about 16 inches, is grayish brown and light brownish gray fine sand. The subsoil, to a depth of 30 inches, is mottled yellowish brown sandy clay loam and clay. The substratum to a depth of 80 inches is light gray clay and clay loam.

Included with this soil in mapping are small areas of Oldsmar, Paisley, Sumterville, and Vero soils. The included soils make up about 20 percent of this map unit.

This soil has a high water table within 20 to 40 inches of the surface for 1 month to 4 months. The available water capacity is moderate. Permeability is rapid in the surface and subsurface layers and is moderately slow in the subsoil and in the substratum. Natural fertility is low.

Native vegetation is cabbage palm, live and water oaks, and sweetgum. The understory includes saw palmetto, paspalum, and panicum.

This Mabel soil has severe limitations for cultivated crops because of periodic wetness. Boulders at or near the surface are a continuing nuisance during tillage operations. Most tillage operations are not impractical if the boulders are removed. The adapted crops are limited unless the soil is adequately drained and soil-improving measures are used. These soils are suitable for many vegetable crops if a water control system is provided to remove excess surface water in wet periods and to provide water for subsurface irrigation in dry periods. Row crops should be rotated with close-growing, soil-improving cover crops. Soil-improving cover crops should be included in the rotation system two-thirds of the time. Conservation tillage helps to conserve moisture and controls erosion. Seedbed preparation should include bedding of the rows. Fertilizer and lime should be applied according to the need of the crops.

This soil is well suited to pasture. Pangolagrass, improved bahiagrass, and white clover grow well when they are properly managed. A water control system is needed to remove excess surface water after heavy rains. To obtain maximum yields, regular applications of fertilizers and lime are needed, and grazing should be controlled to maintain plant vigor. Boulders should be removed to help prevent equipment damage.

This soil has high potential for pine trees. Equipment use limitations are concerns in management. Slash, loblolly, and longleaf pines are the most suitable trees to plant for commercial wood production.

Typically, this soil is characterized by the Upland Hardwood Hammock range site. This community is readily identified by the dense canopy cover of oak, magnolia, and hickory trees. Cattle use these areas primarily for shade and resting areas because of the dense canopy and relatively open understory. Desirable forage includes indiangrass, switchgrass, longleaf uniola, and chalky bluestem.

This soil has severe limitations for most urban uses. The clayey subsoil, shrink-swell potential, and low soil strength are severe limitations for building site development. Wetness is a severe limitation for shallow excavations, dwellings with basements, and sanitary facilities. Because of the slow percolation of this soil, wetness also is a severe limitation to use of this soil as septic tank absorption fields. Random large boulders or groups of boulders may require use of a modified installation design or an alternate site in the map unit for many urban uses.

This Mabel soil is in capability subclass IIIw and in woodland suitability group 11W.

40—Millhopper sand, bouldery subsurface, 0 to 5 percent slopes. This soil is nearly level to gently sloping and is moderately well drained. It is in large areas on the uplands. The mapped areas are wide and range from 50 to 150 acres. Surface and subsurface boulders are about 60 to 250 feet apart. They occur randomly in small groups or individually. Although most boulders have been removed from the cropland and improved pasture, the remaining subsurface boulders can damage equipment that penetrates the soil. The slopes are generally convex.

Typically, the surface layer is dark grayish brown sand about 7 inches thick. The subsurface layer, to a depth of about 45 inches, is pale brown fine sand that has brownish yellow mottles. The upper part of the subsoil, to a depth of about 70 inches, is brownish yellow and light gray sandy clay loam that has gray and brown mottles. The lower part to a depth of 80 inches or more is light gray fine sandy loam that has brown mottles.

Included with this soil in mapping are small areas of Candler, Mabel, Sumterville, and Tavares soils. The included soils make up about 15 percent of this map unit.

In most years, this soil has a high water table within 40 to 60 inches of the surface for 1 month to 4 months and at a depth of 60 to 80 inches for 2 to 4 months. The available water capacity is low. Permeability is rapid in the surface and subsurface layers and is moderate in the subsoil. Natural fertility is low.

Most of the acreage in this map unit is in improved pasture. The native vegetation is live oak and turkey oak.

This Millhopper soil has severe limitations for most cultivated crops. Boulders at or near the surface are a continuing nuisance during tillage operations. Most tillage operations are not impractical if the boulders are removed. Droughtiness and rapid leaching of plant nutrients limit the choice of plants and reduce crop yields. If this soil is cultivated, row crops should be planted on the contour. Close-growing cover crops should be included in the rotation system. Crop residue should be left on the surface to protect the soil from erosion. Irrigation of high-value crops is generally feasible if water is readily available.

This soil is well suited to pasture and hay crops. Coastal bermudagrass and improved bahiagrass are well suited to this soil, but yields are reduced by periodic droughts. Grasses respond to regular fertilizing and liming. Grazing should be controlled to maintain plant vigor and a good ground cover. Boulders should be removed to help prevent equipment damage.

Potential is moderately high for the production of pine trees. Equipment use limitation, seedling mortality, and plant competition are the main concerns in management. Slash, loblolly, and longleaf pines are the most suitable trees to plant for commercial wood production.

Typically, this soil is characterized by the Oak Hammock range site. This community is readily identified by the dense canopy cover of dominantly live oak trees. Cattle use these areas primarily for shade and resting areas because of the dense canopy and relatively open understory. Desirable forage includes longleaf uniola, low panicum, low paspalum, switchgrass, and lopsided indiangrass.

This soil has slight limitations to use as sites for homes and small commercial buildings and for local roads and streets. The depth of the water table during wet periods moderately limits the use of this soil as septic tank absorption fields. Seepage is a severe limitation for sewage lagoons or landfill areas. If used for sewage lagoons or landfill areas, the sandy sidewalls should be sealed. Random large boulders or groups of boulders may require use of a modified installation design or an alternate site in the map unit for many urban uses. The sandy texture is a severe limitation for recreational use and causes poor trafficability in unpaved areas. A suitable topsoil fill material should be used or some form of surface stabilization is needed to reduce or overcome this limitation.

This Millhopper soil is in capability subclass IIIs and in woodland suitability group 11S.

41—Everglades muck, frequently flooded. This soil is nearly level and is very poorly drained. It is in broad marsh areas on the lake and river flood plains. The mapped areas range from 100 to 1,000 acres. The slopes are concave and range from 0 to 1 percent.

Typically, the surface layer is dark brown and black muck underlain by dark reddish brown, black, dark brown, and very dark grayish brown mucky peat to a depth of about 80 inches.

Included with this soil in mapping are small areas of Gator, Okeelanta, and Terra Ceia soils. The included soils make up about 15 percent of this map unit.

This soil is frequently flooded from adjacent lakes, rivers, and springs. The available water capacity is very high throughout. Permeability is rapid throughout. Natural fertility is moderate.

Native vegetation is Florida willow, sawgrass, reeds, lilies, and other aquatic, fibrous, nonwoody plants and hardwood trees.

In its natural state, this Everglades soil is not suited to cultivated crops or pasture because of flooding and wetness.

With adequate drainage, this soil is well suited to most vegetable crops and sugarcane. A water control system is needed to remove excess water, to provide flood protection when crops are on the land, and to help keep the soil saturated at all other times. Fertilizers that contain phosphates, potash, and minor elements are needed. Water-tolerant cover crops should be grown on this soil when it is not used for row crops.

This soil is not suited to pasture because of flooding; however, most improved grasses and clovers adapted to the area grow well if water is properly controlled. Pangolagrass, bahiagrass, and white clover grow well on this soil. A water control system is needed to maintain the water table near the surface to prevent excessive oxidation of the organic horizons. Fertilizers that have a high content of potash, phosphorus, and minor elements are needed. Grazing should be controlled to maintain plant vigor and to obtain maximum yields.

This soil is not suitable for pine trees.

This Everglades soil has not been assigned to a range site.

Excess humus, wetness, and flooding are severe limitations for urban and recreational uses. Removal of organic material and backfilling will not overcome the flooding problems unless a substantial amount of suitable fill material is used.

This Everglades soil is in capability subclass VIIw and in woodland suitability group 6W.

42—Adamsville fine sand. This soil is nearly level and is somewhat poorly drained. It is on low, broad flats and low knolls. The mapped areas are irregular in shape and range from 10 to 200 acres. The slopes are smooth and range from 0 to 2 percent.

Typically, the surface layer is very dark gray fine sand about 8 inches thick. The upper part of the underlying material, to a depth of about 16 inches, is dark grayish brown fine sand. The middle part, to a depth of about 60 inches, is brown fine sand that has mottles in shades of yellow and brown. The lower part to a depth of 80 inches or more is light gray fine sand that has mottles in shades of brown and yellow.

Included with this soil in mapping are small areas of Ona, Pompano, Sparr, and Tavares soils. Also included are areas of Adamsville soils that have random boulders. These areas are adjacent to a map unit that has a bouldery subsurface layer. The included soils make up about 15 percent of this map unit.

In most years, this soil has a high water table within 20 to 40 inches of the surface for 2 to 6 months and at a depth of less than 60 inches for more than 9 months. It is at a depth of 10 to 20 inches for about 2 weeks in some years. The available water capacity is low. Permeability is rapid throughout. Natural fertility is low.

Native vegetation is pine, laurel oak, and water oak. The understory includes saw palmetto, pineland threeawn, indiangrass, bluestem grasses, and several low panicums.

This Adamsville soil has severe limitations for cultivated crops because of periodic wetness. The adapted crops are very limited unless intensive water control measures are used. With adequate drainage, this soil is well suited to many kinds of flowers and vegetables. A water control system is needed to remove excess surface water in wet periods and to provide water for subsurface irrigation in dry periods. Good conservation practices, in addition to water control measures, should be used on this soil. Close-growing cover crops should be included in the rotation system at least two-thirds of the time. Soil-improving crops and the residue of other crops should be used to maintain the organic matter content and to help control erosion. Fertilizer and lime should be applied according to the need of the crops.

This soil is moderately well suited to pasture. Pangolagrass and bahiagrass are well adapted to this soil. A drainage system is needed to remove excess surface water during heavy rains. Regular applications of fertilizer are needed to obtain maximum yields. In some areas, this soil responds well to lime. Grazing should be controlled to maintain plant vigor and to obtain high yields.

Potential is moderately high for the production of pine trees. Equipment use limitations, seedling mortality, and plant competition are concerns in management. Slash and longleaf pines are the most suitable trees to plant for commercial wood production.

Typically, this soil is characterized by the Oak Hammock range site. This community is readily identified by the dense canopy cover of dominantly live oak trees. Cattle use these areas primarily for shade and resting areas because of the dense canopy and relatively open understory. Desirable forage includes longleaf uniola, low panicum, low paspalum, switchgrass, and lopsided indiangrass.

Wetness is a severe limitation for urban and recreational uses. This wetness limitation can be reduced or overcome by installing a drainage system to lower the high water table during wet periods. Mounding may be needed in places for septic tank absorption fields because of wetness. The sandy texture is a severe limitation for recreational use and causes poor trafficability in unpaved areas. A suitable topsoil fill material should be used or some type of surface stabilization is needed to overcome this limitation.

This Adamsville soil is in capability subclass IIIw and in woodland suitability group 10W.

43—Basinger fine sand, depressional. This soil is nearly level and is poorly drained. It is in depressional areas. The mapped areas are irregular in shape and range from 10 to 50 acres. The slopes are smooth to concave and range from 0 to 2 percent.

Typically, the surface layer is very dark gray fine sand about 6 inches thick. The subsurface layer, to a depth of about 15 inches, is light brownish gray fine sand. The subsoil, to a depth of about 30 inches, is dark brown fine sand. The substratum to a depth of about 80 inches or more is pale brown fine sand.

Included with this soil in mapping are small areas of Floridana, Placid, Pompano, and Myakka soils. The included soils make up about 20 percent of this map unit.

This soil is ponded for 6 to 8 months or more in most years. The available water capacity is low. Permeability is rapid. Natural fertility is low.

Native vegetation is mainly maidencane, panicum, creeping bluestem, and chalky bluestem.

In its natural state, this Basinger soil is not suited to cultivated crops or pasture. Water stands on the surface for long periods. In many places, an adequate drainage system is difficult to establish because suitable outlets are not available.

This soil is not suited to pine trees because of ponding. Equipment use limitations, seedling mortality, and plant competition are severe concerns in management.

Typically, this soil is characterized by the Freshwater Marshes and Ponds range site. This site can be identified by an open expanse of grasses, sedges, rushes, and other herbaceous plants. If grazing is controlled, this range site has the potential to produce more forage than any of the other range sites. Chalky bluestem and blue maidencane dominate the drier parts of the range site, and maidencane is the dominant plant in the wetter parts. Other desirable forage on this site includes cutgrass, bluejoint panicum, sloughgrass, and low panicum. Periodic high water levels provide a natural deferment from cattle grazing. Carpetgrass, an introduced plant, tends to dominate the drier parts of the range site if the soil is overgrazed. Some areas that are dominated by hardwood or cypress trees are poorly suited to rangeland.

Ponding and seepage are severe limitations for urban and recreational uses. Most areas are difficult to drain; however, the wetness limitation can be reduced or overcome by installing a drainage system to remove excess surface water and to lower the high water table during wet periods or by adding a suitable fill material in the depressions. Also, seepage should be controlled before using this soil for sanitary facilities because of the possibility of pollution of water supplies. The sandy texture is a severe limitation for recreational use and causes poor trafficability in unpaved areas. A suitable topsoil fill material should be used or some other type of surface stabilization is needed to overcome this limitation.

This Basinger soil is in capability subclass VIIw and in woodland suitability group 6W.

44—Oldsmar fine sand, bouldery subsurface. This soil is nearly level and is poorly drained. It is in broad areas on the flatwoods. The mapped areas are generally irregular in shape and range from 20 to 600 acres. Surface and subsurface boulders are about 60 to 250 feet apart. They occur randomly in small groups or individually. Although most boulders have been removed from the cropland and improved pasture, the remaining subsurface boulders can damage equipment that penetrates the soil. The slopes are smooth and range from 0 to 2 percent.

Typically, the surface layer is very dark gray grading to dark gray fine sand about 9 inches thick. The subsurface layer, to a depth of about 31 inches, is light brownish gray and light gray fine sand. The upper part of the subsoil, to a depth of about 38 inches, is black fine sand. The middle part, to a depth of about 48 inches, is dark reddish brown fine sand. The lower part to a depth of 80 inches or more is light olive gray and greenish gray sandy clay loam that has mottles in shades of brown and olive.

Included with this soil in mapping are small areas of EauGallie, Electra, Immokalee, and Vero soils. The included soils make up about 15 percent of this map unit.

In most years, this soil has a high water table at a depth of 10 to 40 inches for 6 months or more and at a depth of less than 10 inches for 1 month to 3 months. The available water capacity is low. Permeability is rapid in the surface and subsurface layers. It is moderately rapid to moderately slow in the sandy part of the subsoil and slow to very slow in the loamy part. Natural fertility is low.

The natural vegetation is mostly live and laurel oaks and slash pine. The understory includes saw palmetto, waxmyrtle, and pineland threeawn.

This Oldsmar soil has very severe limitations for cultivated crops because of wetness and poor soil quality. Boulders at or near the surface are a continuing nuisance during tillage operations. Most tillage operations are not impractical if the boulders are removed. The adapted crops are limited unless very intensive management practices are used. With adequate drainage and the use of good conservation practices, this soil is well suited to many vegetable crops. A water control system is needed to remove excess surface water in wet periods and to provide water for subsurface irrigation in dry periods. Row crops should be rotated with close-growing, soil-improving cover crops. Soil-improving cover crops should be included in the rotation system three-fourths of the time. Crop residues and soil-improving crops should be used to maintain organic matter content and to help control erosion.

This soil is well suited to pasture. Pangolagrass, improved bahiagrass, and white clover grow well if they are properly managed. A water control system is needed to remove excess surface water after heavy rains. To obtain maximum yields, regular applications of fertilizers and lime are needed, and grazing should be controlled to maintain plant vigor. Boulders should be removed to help prevent equipment damage.

This soil has moderately high potential for the production of pine trees. The main concerns in management are equipment use limitations during periods of heavy rainfall, seedling mortality, and plant competition. A drainage system is needed to remove excess surface water. Slash pine is the preferred tree to plant for commercial wood production.

Typically, this soil is characterized by the South Florida Flatwoods range site. This site can be identified by scattered pine trees and an understory of saw palmetto and grasses. If grazing is controlled, the site has the potential to produce significant amounts of creeping bluestem, lopsided indiangrass, chalky bluestem, and various panicums. As range deterioration occurs because of overgrazing, the site is dominated by saw palmetto and pineland threeawn (wiregrass).

Wetness is a severe limitation for urban and recreational uses. This wetness limitation can be reduced or overcome by installing a drainage system to lower the high water table during wet periods. Mounding may be needed in places for septic tank absorption fields because of wetness and slow permeability. Random large boulders or groups of boulders may require use of a modified installation design or an alternate site in the map unit for many urban uses. The sandy texture is a severe limitation for recreational use and causes poor trafficability in unpaved areas. A suitable topsoil fill material should be used or some type of surface stabilization is needed to overcome this limitation.

This Oldsmar soil is in capability subclass IVw and in woodland suitability group 10W.

45—Electra fine sand, bouldery subsurface. This soil is nearly level to gently sloping and is somewhat poorly drained. It is on slight ridges on the flatwoods. The mapped areas are irregular in shape and range from 30 to 100 acres. Surface and subsurface boulders are about 60 to 250 feet apart. They occur randomly in small groups or individually. Although most boulders have been removed from the cropland and improved pasture, the remaining subsurface boulders can damage equipment that penetrates the soil. The slopes are smooth and range from 0 to 3 percent.

Typically, the surface layer is gray fine sand about 3 inches thick. The subsurface layer, to a depth of about 35 inches, is white fine sand. The upper part of the subsoil, to a depth of about 40 inches, is dark reddish brown fine sand. The next layer, to a depth of about 46 inches, is brown fine sand. The lower part of the subsoil to a depth of 80 inches or more is light brownish gray sandy clay loam grading to light gray fine sandy loam.

Included with this soil in mapping are small areas of EauGallie, Pomello, Sparr, and Vero soils. The included soils make up about 15 percent of this map unit.

In most years, this soil has a high water table between depths of 25 to 40 inches for about 4 months. It recedes to a depth of more than 40 inches during drier periods. The available water capacity is low. Permeability is rapid in the surface and subsurface layers. It is moderate in the sandy part of the subsoil and slow or very slow in the loamy part.

Native vegetation is mostly slash pine. The understory includes scrub oak, saw palmetto, lopsided indiangrass, pineland threeawn, and other grasses, vines, and forbs.

This Electra soil has very severe limitations for cultivated crops because of droughtiness and periodic wetness. Boulders at or near the surface are a continuing nuisance during tillage operations. Most tillage operations are not impractical if the boulders are removed. During wet periods, the high water table can cause some retardation of root development. A well designed drainage system can help overcome this limitation. During most years, irrigation is needed for most crops.

This soil is only moderately suited to improved pasture grasses. It is not suited to clover. Yields for grasses, such as pangolagrass and bahiagrass, are fair if properly managed. Fertilizer and lime should be applied according to the need of the crops. Periodic drought reduces crop yields. Grazing should be restricted to maintain plant vigor, to obtain high yields, and to help keep a good ground cover. Boulders should be removed to help prevent equipment damage.

The potential of this soil for the production of pine trees is moderate. Equipment limitations and seedling mortality are the main concerns in management. Slash pine is the preferred tree to plant for commercial wood production.

Typically, this soil is characterized by the South Florida Flatwoods range site. This site can be identified by scattered pine trees and an understory of saw palmetto and grasses. If grazing is controlled, the site has the potential to produce significant amounts of creeping bluestem, lopsided indiangrass, chalky bluestem, and various panicums. As range deterioration occurs because of overgrazing, the site is dominated by saw palmetto and pineland threeawn (wiregrass). Some areas of this soil support dense stands of oak trees. This soil provides good shade and resting areas for cattle but provides insufficient grazing.

This soil has moderate limitations as sites for homes and small commercial buildings and for local roads and streets. The depth of the water table during wet periods is a severe limitation to use of this soil for septic tank absorption fields and sanitary landfills. Random large boulders or groups of boulders may require use of a modified installation design or an alternate site in the map unit for many urban uses. The sandy texture is a severe limitation for recreational use and causes poor trafficability in unpaved areas. A suitable topsoil fill material should be used or some other form of surface stabilization is needed to reduce or overcome this limitation.

This Electra soil is in capability subclass VIs and in woodland suitability group 9S.

46—Ft. Green fine sand, bouldery subsurface. This soil is nearly level to gently sloping and is poorly drained. It is on broad, low ridges and small knolls. The mapped areas are irregular in shape and range from 20 to 250 acres. Surface and subsurface boulders are about 30 to 150 feet apart. They occur randomly in small groups or individually. Although most boulders have been removed from the cropland and improved pasture, the remaining subsurface boulders can damage equipment that penetrates the soil. The slopes are smooth and range from 0 to 3 percent.

Typically, the surface layer is dark grayish brown fine sand about 6 inches thick. The subsurface layer, to a depth of about 28 inches, is grayish brown and light gray fine sand. The subsoil, to a depth of about 58 inches, is gray grading to dark gray sandy clay loam. Below the subsoil to a depth of 80 inches is gray cobbly sandy clay loam. About 10 to 20 percent cobbles are in the subsoil.

Included with this soil in mapping are small areas of Mabel, Paisley, and Vero soils. The included soils make up about 25 percent of this map unit.

This soil has a high water table within 10 inches of the surface for 1 month to 4 months during most years. The available water capacity is moderate. Permeability is rapid in the surface and subsurface layers and is slow to moderately slow in the subsoil. Natural fertility is low.

Native vegetation is scattered longleaf pine, slash pine, cabbage palms, live and laurel oaks, sweetgum, saw palmetto, waxmyrtle, pineland threeawn, and many other native grasses, vines, and shrubs.

This Ft. Green soil has severe limitations for cultivation because of wetness. Boulders at or near the surface are a continuing nuisance during tillage operations. Most tillage operations are not impractical if the boulders are removed. With adequate drainage, this soil is well suited to many fruit and vegetable crops. A water control system is needed to remove excess surface water rapidly and to provide water for subsurface irrigation. Good conservation practices, in addition to water control measures, should be used if this soil is cultivated. Close-growing cover crops should be included in the rotation system at least two-thirds of the time. Conservation tillage helps to conserve moisture and controls plant damage from blowing soil. Seedbed preparation should include bedding of rows. Fertilizers should be applied according to the need of the crops.

This soil is well suited to pasture and hay crops. It is well suited to pangolagrass, bahiagrass, and clover. Excellent pastures of grass or a mixture of grass and clover can be grown if properly managed. To obtain maximum yields, fertilizer should be applied on a regular basis, and grazing should be controlled to maintain plant vigor and good ground cover. Boulders should be removed to help prevent equipment damage.

This soil has moderately high potential for pine tree production. The main concerns in management are the use of equipment during heavy rains and plant competition. Seedling mortality is commonly high. Slash pine is the preferred tree to plant for commercial wood production.

Typically, this soil is characterized by the Oak Hammock range site. This community is readily identified by the dense canopy cover of dominantly live oak trees. Cattle use these areas primarily for shade and resting areas because of the generally dense canopy and relatively open understory. Desirable forage includes longleaf uniola, low panicum, low paspalum, switchgrass, and lopsided indiangrass.

Wetness is a severe limitation for most urban uses. The wetness limitation can be reduced or overcome by installing a drainage system to lower the high water table during wet periods. Mounding may be needed in places for septic tank absorption fields because of wetness and slow permeability. Random large boulders or groups of boulders may require use of a modified installation design or an alternate site in the map unit for many urban uses. The sandy texture is a severe limitation for recreational use and causes poor trafficability in unpaved areas. A suitable topsoil fill material should be used or some type of surface stabilization is needed to overcome this limitation.

This Ft. Green soil is in capability subclass IIIw and in woodland suitability group 11W.

47—Okeelanta muck, frequently flooded. This soil is nearly level and is very poorly drained. It is in swamps and marshes along the flood plains of the major rivers, lakes, and streams in Sumter County. The mapped areas mostly are narrow and long and range from about 50 to 200 acres. The slopes are smooth and range from 0 to 1 percent.

Typically, the surface layer is dark reddish brown muck about 19 inches thick. The underlying material to 80 inches is grayish brown and light gray fine sand.

Included in mapping are small areas of Gator and Terra Ceia soils. The included soils make up about 25 percent of this map unit.

This soil is frequently flooded for very long periods. The available water capacity is high. Permeability is rapid throughout. Natural fertility is moderate.

Native vegetation is baldcypress, sweetgum, and water hickory.

This Okeelanta soil is not suited to cultivated crops or pasture because of flooding. An adequate drainage system is difficult to establish since it generally requires regulating streamflow.

This soil is not suited to pine trees because of flooding and extended periods of wetness.

This soil has not been assigned to a range site.

Excess humus and flooding are severe limitations for urban and recreational uses. Removal of organic material and backfilling will not overcome the flooding limitation unless a substantial amount of suitable fill material is used.

This Okeelanta soil is in capability subclass VIIw and in woodland suitability group 6W.

48—Malabar fine sand, frequently flooded. This soil is nearly level and is poorly drained. It is along the flood plains of major rivers and streams. The mapped areas are irregular in shape and range from 20 to 400 acres. The slopes are smooth and range from 0 to 2 percent.

Typically, the surface layer is black fine sand about 6 inches thick. The subsurface layer, to a depth of 24 inches, is light gray fine sand. The upper part of the subsoil, to a depth of about 48 inches, is pale brown and very pale brown fine sand. The middle part, to a depth of about 74 inches, is olive gray fine sandy loam. The lower part to a depth of 80 inches or more is light gray sandy clay loam.

Included with this soil in mapping are small areas of EauGallie, Ft. Green, Kanapaha, Oldsmar, and Pompano soils. Also included are areas of Malabar soils that have random boulders. These areas are adjacent to a map unit that has a bouldery subsurface layer. The included soils make up about 20 percent of this map unit.

In most years, this soil has a high water table at a depth of 10 inches for about 6 months. These soils are frequently flooded for very long periods during the rainy season. The available water capacity is low. Permeability is rapid in the surface and subsurface layers. It is rapid in the upper part of the subsoil and slow to very slow in the lower part. Natural fertility is low.

Native vegetation is scattered saw palmetto, cabbage palm, water oak, slash pine, sweetgum, hickory, panicum, sedges, and other water-tolerant plants.

In its natural state, this Malabar soil is not suited to cultivated crops or improved pasture because of its susceptibility to flooding, which severely restricts its use. If the hazard of flooding can be overcome and very intensive conservation practices are used, this soil is well suited to many vegetable crops and is suitable for pasture. A water control system is needed to remove excess surface water in wet periods and to provide water for subsurface irrigation in dry periods. If planted, row crops should be rotated with close-growing, soil-improving cover crops. Soil-improving cover crops should be included in the rotation system three-fourths of the time. Crop residues of other crops and soil-improving cover crops should be used to maintain tilth and organic matter content and to protect the soil from erosion. Seedbed preparation should include bedding of the rows. Fertilizer and lime should be applied according to the need of the crops.

This soil is not suited to pasture unless a flood control system and a drainage system is provided. Pangolagrass, bahiagrass, and clover grow well if they are properly managed. To obtain maximum yields, regular applications of fertilizer and lime are needed, and grazing should be controlled to maintain plant vigor.

This soil has moderate potential for the production of slash pine trees if properly managed. Planting the trees on beds provides good surface drainage. Before the soil's potential can be reached, a water control system to reduce the hazard of flooding and remove excess surface water is also needed before the trees are planted.

This soil has not been assigned to a range site.

This soil is not suited to urban and recreational uses because of the hazard of flooding. The wetness limitation can be reduced or overcome if the areas are protected from flood waters and a drainage system is installed to lower the high water table to an acceptable depth. The addition of fill material may also be needed to overcome the wetness limitation. The sandy texture is a severe limitation for recreational use and causes poor trafficability in unpaved areas. A suitable topsoil fill material should be used or some other type of surface stabilization is needed to overcome this limitation.

This Malabar soil is in capability subclass VIw and in woodland suitability group 6W.

49—Terra Ceia muck, frequently flooded. This soil is nearly level and is very poorly drained. It is in hardwood swamps. The mapped areas are large and wide and range from 50 to 2,500 acres. The slopes are smooth and range from 0 to 1 percent.

Typically, the surface layer is very dark gray muck about 10 inches thick and underlain by black muck to a depth of about 80 inches.

Included with this soil in mapping are small areas of Gator and Okeelanta soils. The included soils make up less than 15 percent of this map unit.

The soil is frequently flooded. The available water capacity is very high throughout. Permeability is moderate or moderately rapid throughout. Natural fertility is moderate.

Native vegetation is cypress and various hardwood trees. The understory includes sawgrass, lilies, sedges, reeds, and other aquatic plants.

In its natural state, this Terra Ceia soil is not suited to cultivated crops because of flooding. With adequate flood control, it is well suited to most vegetable crops. A well designed and maintained water control system is needed. A water control system is needed to remove excess surface water when crops are on the land and to keep the soil saturated at all other times. Fertilizers that contain phosphates, potash, and minor elements are needed. Water-tolerant cover crops should be kept on the soil when it is not used for row crops. Cover crops and the residue of other crops should be used to maintain the organic matter content and to protect the soil from wind erosion.

This soil is not suited to pasture because of flooding. If water can be properly controlled, most improved grasses and clovers adapted to the area will grow well. High yields of pangolagrass, bahiagrass, and white clover can be grown. A water control system is needed to maintain the water table near the surface to prevent excessive oxidation of the organic horizons. Fertilizers that have a high content of potash, phosphorus, and minor elements are needed. Grazing should be controlled to obtain maximum yields.

This soil is not suitable for pine trees.

The soil in this map unit has not been assigned to a range site.

This soil is not suitable for urban and recreational uses because of excess humus and flooding. Subsidence because of the oxidation of organic matter is a major hazard. Removal of organic material and backfilling will not overcome the flooding problems unless a substantial amount of suitable fill material is used.

This Terra Ceia soil is in capability subclass VIIw and in woodland suitability group 6W.

50—Immokalee sand. This soil is nearly level and is poorly drained. It is on the broad flatwoods. The mapped areas are irregular in shape and range from 40 to 150 acres. The slopes are smooth and range from 0 to 2 percent.

Typically, the surface layer is very dark gray sand about 6 inches thick. The subsurface layer, to a depth of about 34 inches, is light gray sand. The subsoil, to a depth of about 58 inches, is dark reddish brown and dark brown sand. The substratum to a depth of 80 inches or more is brown sand.

Included with this soil in mapping are small areas of Basinger, Myakka, Oldsmar, and Pomello soils. Also included are areas of Immokalee soils that have random boulders. These areas are adjacent to a map unit that has a bouldery subsurface layer. These soils are generally south of the Jumper Creek Swamp area. The included soils make up about 15 percent of this map unit.

In most years, this soil has a high water table within 10 inches of the surface for 1 month to 4 months. It recedes to a depth of more than 40 inches during dry periods. The available water capacity is low. Permeability is rapid throughout except in the moderately permeable subsoil. Natural fertility is low.

Native vegetation is longleaf pine and slash pine. The understory includes saw palmetto, gallberry, waxmyrtle, pineland threeawn, and bluestem.

This Immokalee soil has very severe limitations for cultivated crops because of wetness and poor soil quality. The adapted crops are limited unless very intensive management practices are used. Good conservation practices, in addition to water control measures, should be used if this soil is cultivated. With adequate drainage, this soil is suited to a variety of vegetable crops. A water control system is needed to remove excess surface water in wet periods and to provide water for subsurface irrigation in dry periods. Row crops should be rotated with close-growing, soil-improving cover crops. Soil-improving cover crops should be included in the rotation system three-fourths of the time. Soil improving cover crops and the residue of other crops should be used to maintain organic matter content and to protect the soil from erosion. Seedbed preparation should include bedding of the rows. Fertilizer and lime should be applied according to the need of the crops.

This soil is well suited to pasture. Pangolagrass, improved bahiagrass, and white clover grow well if they are properly managed. A water control system is needed to remove excess surface water after heavy rains. To obtain maximum yields, regular applications of fertilizer and lime are needed, and grazing should be controlled to maintain plant vigor.

The potential of this soil for the production of pine trees is moderate. The main concerns in management are equipment use limitations during heavy rains, windthrow hazard, seedling mortality, and plant competition. To help overcome the equipment use limitation and reduce seedling mortality, a water control system should be installed to remove excess surface water. Slash pine is the preferred tree to plant for commercial wood production.

Typically, this soil is characterized by the South Florida Flatwoods range site. This site can be identified by scattered pine trees and an understory of saw palmetto and grasses. If grazing is controlled, the site has the potential to produce significant amounts of creeping bluestem, lopsided indiangrass, chalky bluestem, and various panicums. As range deterioration occurs because of overgrazing, the site is dominated by saw palmetto and pineland threeawn (wiregrass).

Wetness is a severe limitation for urban and recreational uses. This wetness limitation can be reduced or overcome by installing a drainage system to lower the high water table during wet periods. Seepage should be controlled before using this soil for sanitary facilities because of the possibility of pollution of water supplies. The sandy texture is a severe limitation for recreational use and causes poor trafficability in unpaved areas. A suitable topsoil fill material should be used or some other type of surface stabilization is needed to overcome this limitation.

This Immokalee soil is in capability subclass IVw and in woodland suitability group 9W.

51—Pits-Dumps complex. This map unit consists of pits from which soil material and limestone or shell has been or is being removed and consists of dumps where these materials have been piled. It includes exposed soil material, shell, or limestone that is ready for mining, and piles of topsoil that have been saved for use in revegetating the area after mining operations have ceased. Individual areas of pits and dumps are impractical to map separately.

Only a few areas mapped as Pits-Dumps complex are still actively being mined. Most areas have been abandoned and are not suitable for crops or trees. However, these areas are highly suited to pasture, habitat for wildlife, and recreation areas if they are reshaped and revegetated to conform to the existing landscapes. Most Pits contain water and are mapped separately as water. These Pits are well suited to fish if they are stocked and managed properly.

Also included in mapping are sanitary landfill areas. These areas consist of alternate layers of waste and soil materials.

This map unit has not been assigned to a capability subclass, to a range site, or to a woodland suitability group.

52—Candler sand, 8 to 12 percent slopes. This soil is strongly sloping and is excessively drained. It is in the sandhills. The mapped areas are irregular in shape. Most areas range from 20 to 1,000 acres. The slopes are concave.

Typically, the surface is light gray sand about 5 inches thick. The subsurface layer, to a depth of about 52 inches, is pale yellow and very pale brown sand. The next layer to a depth of about 80 inches is yellow sand that has thin yellowish brown textural bands.

Included with this soil in mapping are small areas of Apopka, Astatula, Lake, Millhopper, and Tavares soils. Also included are areas of Candler soils that have random boulders. These areas are adjacent to a map unit that has a bouldery subsurface layer. The included soils make up about 20 percent of this map unit.

This soil does not have a high water table within 80 inches of the surface. The available water capacity is very low. Permeability is very rapid. Natural fertility is low.

Native vegetation is mostly turkey oak, scrub oak, pineland threeawn, and running oak.

This Candler soil is generally not suited to most commonly cultivated crops or pasture because of droughtiness, steep slopes, and rapid leaching of plant nutrients.

This soil produces low yields of improved pasture grasses, even if good management practices are used. Grasses, such as pangolagrass and bahiagrass, are better adapted to this soil.

The potential of this soil for the production of pine trees is moderate. The equipment use limitations, hazard of erosion on steeper slopes, and seedling mortality are the main concerns in management. Sand, longleaf, and slash pines are the preferred trees to plant for commercial wood production.

Typically, this soil is characterized by the Longleaf Pine-Turkey Oak Hills range site. It is readily recognized by the landform and dominant vegetation of longleaf pine and turkey oak. Natural fertility is low because of the rapid movement of plant nutrients and water through the soil. Forage production and quality are poor, and cattle do not use this range site if other sites are available. Desirable forage includes creeping bluestem, lopsided indiangrass, and low panicum.

Slope is a moderate limitation for most urban uses. Seepage is a severe limitation to use of this soil for sewage lagoons or landfill areas. If used for sewage lagoons or landfill areas, the floor and sidewalls should be sealed. The sandy texture is a severe limitation for recreational use and causes poor trafficability in unpaved areas. Slope is a severe limitation for playgrounds. A suitable topsoil fill material should be used or some form of surface stabilization is needed to reduce or overcome these limitations.

This Candler soil is in capability subclass VIs and in woodland suitability group 8S.

53—Tavares fine sand, bouldery subsurface, 0 to 5 percent slopes. This soil is nearly level to gently sloping and is moderately well drained. It is on the broad uplands and knolls. The mapped areas are irregular in shape and range from 20 to 100 acres. Surface and subsurface boulders are about 60 to 250 feet apart. They occur randomly in small groups or individually. Although most boulders have been removed from the cropland and improved pasture, the remaining subsurface boulders can damage equipment that penetrates the soil. The slopes are generally convex.

Typically, the surface layer is dark grayish brown fine sand about 7 inches thick. The underlying material to a depth of 80 inches or more is pale brown to light gray fine sand.

Included with this soil in mapping are small areas of Adamsville, Millhopper, and Sparr soils. Also included are some areas of soils that are similar to Tavares soil but have a stained layer or coarse fragments at a depth of more than 70 inches. The included soils make up about 20 percent of this map unit.

During most years, this soil has a high water table within 40 to 80 inches of the surface for more than 6 months but recedes to a depth of more than 80 inches during droughty periods. The available water capacity is low to very low. Permeability is very rapid or rapid. Natural fertility is low.

Native vegetation is live oak, slash pine, and longleaf pine. The understory includes pineland threeawn and scattered saw palmetto.

This Tavares soil has severe limitations for most cultivated crops. Boulders at or near the surface are a continuing nuisance during tillage operations. Most tillage operations are not impractical if the boulders are removed. Droughtiness and rapid leaching of plant nutrients limit the choice of plants and reduce crop yields. If this soil is cultivated, row crops should be planted on the contour. Close-growing cover crops should be included in the rotation system at least two-thirds of the time. Soil-improving cover crops and residue of other crops should be used to protect the soil from erosion. Irrigation of high-value crops is generally feasible if water is readily available.

The soil is well suited to pasture and hay crops. Coastal bermudagrass and improved bahiagrass are well suited to this soil, but yields are reduced by periodic droughts. Grasses respond to regular fertilizing and liming. Grazing should be controlled to maintain plant vigor and a good ground cover. Boulders should be removed to help prevent equipment damage.

The potential of this soil is moderately high for the production of pine trees. Equipment use limitations, seedling mortality, and plant competition are concerns in management. Slash and longleaf pines are the most suitable trees to plant for commercial wood production.

Typically, this soil is characterized by the Longleaf Pine-Turkey Oak Hills range site. It is readily recognized by the landform and dominant vegetation of longleaf pine and turkey oak. Natural fertility is low because of the rapid movement of plant nutrients and water through the soil. Forage production and quality are poor, and cattle do not use this range site if other sites are available. Desirable forage includes creeping bluestem, lopsided indiangrass, and low panicum.

This soil has slight limitations to use as sites for homes and small commercial buildings and for local roads and streets. The depth of the water table during wet periods is a moderate limitation to use of this soil as septic tank absorption fields. Seepage is a severe limitation for sewage lagoons or landfill areas. If used for sewage lagoons or landfill areas, the sandy sidewalls and floors should be sealed. Random large boulders or groups of boulders may require use of a modified installation design or an alternate site in the map unit for many urban uses. The sandy texture is a severe limitation for recreational use and causes poor trafficability in unpaved areas. A suitable topsoil fill material should be used or some form of surface stabilization is needed to reduce or overcome this limitation.

This Tavares soil is in capability subclass IIIs and in woodland suitability group 10S.

54—Monteocha fine sand, depressional. This soil is nearly level and is very poorly drained. It is in wet depressional areas. The mapped areas are irregular in shape and range from 50 to 200 acres. The slopes are concave and range from 0 to 2 percent.

Typically, the surface layer is very dark gray fine sand about 11 inches thick. The subsurface layer, to a depth of about 28 inches, is gray fine sand. The upper part of the subsoil, to a depth of about 34 inches, is very dark grayish brown fine sand. The middle part, to a depth of about 55 inches, is dark grayish brown and brown fine sand. The lower part of the subsoil to a depth of 80 inches or more is gray fine sandy loam.

Included with this soil in mapping are small areas of Basinger, Floridana, Okeelanta, Placid, and Vero soils. The included soils make up about 25 percent of this map unit.

During most years, this soil has a high water table within 10 inches of the surface for 4 months or more and is ponded for more than 6 months. The available water capacity is moderate. Permeability is rapid in the surface and subsurface layers. It is moderate or moderately rapid in the upper part of the subsoil and slow or moderately slow in the lower part. Natural fertility is low.

Native vegetation is maidencane, cypress, pond pine, pickerelweed, water lilies, and various aquatic plants.

In its natural state, this Monteocha soil is not suited to cultivated crops or improved pasture because of ponding. Not only is wetness a very severe problem, but drainage and water control are also severe problems. Water control systems are difficult to establish. Most areas of this soil are in isolated ponds that do not have suitable drainage outlets. A good water control system normally requires an extensive system of canals and ditches. With proper management, adapted grasses or grass-clover pastures can be grown if the areas can be adequately drained and a good water control system can be maintained.

This soil is not suited to pine trees because of ponding.

Typically, this soil is characterized by the Freshwater Marshes and Ponds range site. This site can be identified by an open expanse of grasses, sedges, rushes, and other herbaceous plants. If grazing is controlled, this site has the potential to produce more forage than any of the other range sites. Chalky bluestem and blue maidencane dominate the drier parts of the range site, and maidencane is the dominant plant in the wetter parts. Other desirable forage on this site includes cutgrass, bluejoint panicum, sloughgrass, and low panicum. Periodic high water levels provide natural deferment from cattle grazing. Carpet grass, an introduced plant, tends to dominate the drier parts of the site if the soil is overgrazed. Some areas of this soil that support dense stands of hardwood or cypress are poorly suited to rangeland.

Ponding is a severe limitation for urban and recreational uses. This limitation can be reduced by installing a drainage system to lower the high water table during wet periods or by adding a suitable fill material in the depressions. Seepage should be controlled before using this soil for sanitary facilities because of the possibility of pollution of water supplies. The sandy texture is a severe limitation for recreational use and causes poor trafficability in unpaved areas. A suitable topsoil fill material should be used or some other type of surface stabilization is needed to overcome this limitation.

This Monteocha soil is in capability subclass VIIw and in woodland suitability group 6W.

55—Pomello fine sand, 0 to 5 percent slopes. This soil is nearly level to gently sloping and is somewhat poorly drained. It is on low ridges on the flatwoods. The mapped areas are irregular in shape and range from 10 to 100 acres. The slopes are smooth.

Typically, the surface layer is gray fine sand about 6 inches thick. The subsurface layer, to a depth of about 40 inches, is white fine sand. The upper part of the subsoil, to a depth of about 48 inches, is dark brown fine sand. The middle part, to a depth of about 56 inches, is black fine sand. The lower part to a depth of 80 inches or more is dark brown fine sand.

Included with this soil in mapping are small areas of Adamsville, Immokalee, Myakka, Oldsmar, and Sparr soils. The included soils make up about 15 percent of this map unit.

During most years, this soil has a high water table within 24 to 42 inches of the surface for 1 month to 4 months and recedes to a depth of more than 42 inches during drier periods. The available water capacity is low. Permeability is very rapid in the surface and subsurface layers and is moderately rapid in the subsoil. Natural fertility is low.

Native vegetation is live oak, scrub oak, laurel oak, magnolia, and sweetgum. The understory includes saw palmetto, pineland threeawn, and bluestem.

This Pomello soil has very severe limitations for most cultivated crops. The high water table limits the rooting zone for most plants. During dry periods, the water table recedes to a depth not available to most plants. A water control system is needed to remove excess surface water in wet periods. With adequate drainage, this soil is moderately suited to many kinds of flowers and vegetables. Good conservation practices, in addition to a water control system, should be used if the soil is cultivated. Close-growing cover crops should be included in the rotation system at least two-thirds of the time. Soil-improving cover crops and the residue of other crops should be used to protect the soil from erosion and to maintain organic matter content. Fertilizer and lime should be applied according to the need of the crops.

This soil is moderately well suited to pasture. Yields for grasses, such as coastal bermudagrass and bahiagrass, are fair if fertilizer is applied. A drainage system is needed to remove excess surface water during heavy rains. Grazing should be controlled to maintain plant vigor and to obtain high yields.

The potential of this soil is moderate for pine tree production. Equipment use and seedling mortality are concerns in management. Slash pine is the preferred tree to plant for commercial wood production.

Typically, this soil is characterized by the South Florida Flatwoods range site. This site can be identified by scattered pine trees and an understory of saw palmetto and grasses. If grazing is controlled, the site has the potential to produce significant amounts of creeping bluestem, lopsided indiangrass, chalky bluestem, and various panicums. As range deterioration occurs because of overgrazing, the site is dominated by saw palmetto and pineland threeawn (wiregrass). A few areas of this soil support dense stands of oak trees. This soil provides good shade and resting areas for cattle but provides insufficient grazing.

Wetness and seepage are severe limitations for urban uses. This wetness limitation can be reduced or overcome by installing a drainage system to lower the high water table during wet periods. Mounding may be needed in areas used for septic tank absorption fields because of wetness. If used for sewage lagoons or sanitary landfill areas, sidewalls should be sealed to prevent seepage. The sandy texture is a severe limitation for recreational use and causes poor trafficability in unpaved areas. A suitable topsoil fill material should be used or some type of surface stabilization is needed to overcome this limitation.

This Pomello soil is in capability subclass VIs and in woodland suitability group 9S.

56—**Vero fine sand, depressional.** This soil is nearly level and is poorly drained. It is in wet depressional areas. The mapped areas are irregular in shape and range from 10 to 100 acres. The slopes are concave and range from 0 to 2 percent.

Typically, the surface layer is black fine sand about 5 inches thick. The subsurface layer, to a depth of about 12 inches, is grayish brown fine sand. The upper part of the subsoil, to a depth of about 28 inches, is dark brown fine sand. The lower part, to a depth of about 55 inches, is grayish brown sandy clay loam. The substratum to a depth of 80 inches or more is gray fine sandy loam.

Included with this soil in mapping are small areas of Floridana, Gator, Monteocha, and Paisley soils. The included soils make up about 25 percent of this map unit.

This soil is ponded for 6 to 8 months. The available water capacity is medium. Permeability is rapid in the surface and subsurface layers and is moderately slow in the subsoil. Natural fertility is low.

Native vegetation is pickerelweed, maidencane, and various aquatic plants.

In its natural state, this Vero soil is not suited to cultivated crops or improved pasture because of ponding. Not only is wetness a very severe problem, but drainage and water control are also severe problems. Water control systems are difficult to establish. Most areas of this soil are in isolated ponds that do not have suitable drainage outlets. A good water control system normally requires an extensive system of canals and ditches. With proper management, adapted grasses or grass-clover pastures can be grown if the areas can be adequately drained and a water control system can be maintained.

This soil is not suited to pine trees because of ponding.

Typically, this soil is characterized by the Freshwater Marshes and Ponds range site. This site can be identified by an open expanse of grasses, sedges, rushes, and other herbaceous plants. If grazing is controlled, this site has the potential to produce more forage than any of the other range sites. Chalky bluestem and blue maidencane dominate the drier parts of the range site, and maidencane is the dominant plant in the wetter parts. Other desirable forage includes cutgrass, bluejoint panicum, sloughgrass, and low panicum. Periodic high water levels provide natural deferment from cattle grazing. Carpetgrass, an introduced plant, tends to dominate the drier parts of the site if the soil is overgrazed.

Ponding is a severe limitation for urban and recreational uses. This limitation can be reduced by installing a drainage system to lower the high water table during wet periods or by adding suitable fill material in the depressions. In addition, seepage should be controlled before using this soil for sanitary facilities because of the possibility of pollution of water supplies. The sandy texture of this soil is a severe limitation for recreational use and causes poor trafficability in unpaved areas. A suitable topsoil fill material should be used or some other type of surface stabilization is needed to overcome this limitation.

This Vero soil is in capability subclass VIIw and in woodland suitability group 6W.

57—Gator muck, frequently flooded. This soil is nearly level and is very poorly drained. It is in swamps and marshes along the flood plains of the major rivers, lakes, and streams in Sumter County. The mapped areas are mostly wide and long and range from 100 to 2,000 acres. The slopes are smooth and range from 0 to 1 percent.

Typically, the surface layer is very dark grayish brown and black muck about 25 inches thick. The upper part of the underlying material, to a depth of about 40 inches, is light gray fine sand. The lower part to a depth of about 80 inches is gray sandy clay loam and fine sandy loam.

Included with this soil in mapping are small areas of Floridana and Terra Ceia soils. Also included are some soils that are similar to Gator soil but have a loamy surface layer and a few areas of soils that are sandy to a depth of more than 50 inches. The included soils make up about 25 percent of this map unit.

This soil is frequently flooded for very long periods (fig. 10). The available water capacity is very high. Permeability is rapid in the surface layer. It is also rapid in the sandy part of the substratum and moderate in the loamy part. Natural fertility is moderate.

Native vegetation is mostly baldcypress, hickory, redbay, and sweetgum. The understory includes greenbrier and poison ivy.

In its natural state, this Gator soil is not suited to cultivated crops because of flooding. With adequate drainage, this soil is well suited to most vegetable crops and sugarcane. A water control system is needed to remove excess water when crops are on the land and to keep the soil saturated at all other times. Fertilizers that contain phosphates, potash, and minor elements are needed. Water-tolerant cover crops should be grown on this soil when it is not in row crops.

In its natural state, this soil is not suited to pasture because of flooding; however, most improved grasses and clovers adapted to the soil grow well if water is properly controlled. Pangolagrass, bahiagrass, and white clover grow well on this soil. A water control system is needed to maintain the water table near the surface to prevent excessive oxidation of the organic horizons.

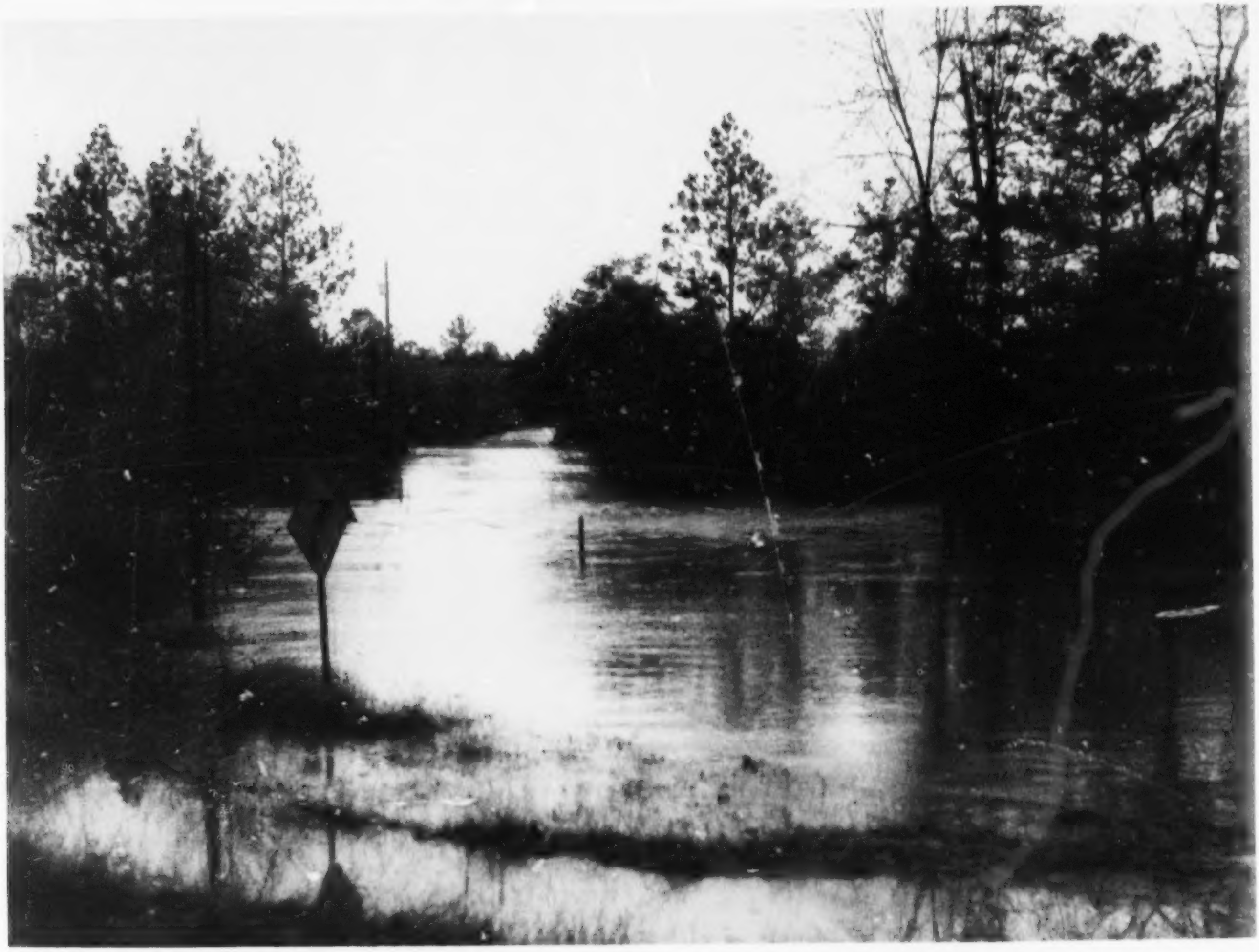

Figure 10.—Flooding can be a problem around lakes, rivers, and streams. This soil is Gator muck, frequently flooded.

Applications of fertilizers that have a high content of potash, phosphorus, and minor elements are needed. Grazing should be controlled to obtain maximum yields.

This soil is not suitable for pine trees.

This map unit has not been assigned to a range site.

Excess humus and flooding are severe limitations for urban and recreational uses. Removal of organic material and backfilling will not overcome flooding problems unless a substantial amount of suitable fill material is used.

This Gator soil is in capability subclass VIIw and in woodland suitability group 6W.

58—Paisley fine sand, depressional. This soil is nearly level and is very poorly drained. It is on nearly level, concave flats. The mapped areas are irregular in shape and range from 10 to 60 acres. The slopes are less than 1 percent.

Typically, the surface layer is black fine sand about 5 inches thick. The subsurface layer, to a depth of about 13 inches, is light brownish gray fine sand. The upper part of the subsoil, to a depth of about 24 inches, is gray sandy clay that has mottles in shades of yellow and brown. The lower part to a depth of about 80 inches is dark gray sandy clay that has mottles in shades of yellow and brown.

Included with this soil in mapping are small areas of Floridana, Ft. Green, and Nittaw soils. Also included are areas of Paisley soils that have random boulders. These areas are adjacent to a map unit that has a bouldery subsurface layer. The included soils make up about 20 percent of this map unit.

During most years, this soil has a high water table that is above the surface for 6 to 8 months and recedes to a depth of 10 inches or more for 1 month to 4 months during dry periods. The available water capacity is moderate. Permeability is rapid in the surface and subsurface layers and is slow in the subsoil. Natural fertility is medium.

Native vegetation is maidencane, chalky bluestem, and pickerelweed.

In its natural state, this Paisley soil is not suited to cultivated crops because of ponding. A drainage system does not function well because of the slow permeability of the subsoil. With adequate drainage, this soil is suited to many locally grown high-value crops. A water control system is needed to remove excess surface and subsurface water rapidly. Conservation practices, such as good seedbed preparation, crop rotation, and regular application of fertilizer and lime, should be used on this soil if cultivated. Cover crops should be rotated with row crops. Cover crops should be included in the rotation system two-thirds of the time. Soil-improving cover crops and the residue of other crops should be used to maintain organic matter content and to protect the soil from erosion.

In its natural state, this soil is not suited to improved pasture grasses and legumes because of ponding; however, if a drainage system is provided to remove excess surface and subsurface water, coastal bermudagrass, bahiagrass, tall fescuegrass, and clover are well adapted to this soil. Good conservation practices, such as fertilizing, liming, and controlled grazing, should be used to obtain maximum yields.

This soil is not suited to pine trees because of ponding.

Typically, this soil is characterized by the Freshwater Marshes and Ponds range site. This site can be identified by an open expanse of grasses, sedges, rushes, and other herbaceous plants. If grazing is controlled, this site has the potential to produce more forage than any of the other range sites. Chalky bluestem and blue maidencane dominate the drier parts of the site, and maidencane is the dominant plant in the wetter parts. Other desirable forage includes cutgrass, bluejoint panicum, sloughgrass, and low panicum. Periodic high water levels provide natural deferment from cattle grazing. Carpetgrass, an introduced plant, tends to dominate the drier parts of the site if the soil is overgrazed. Some areas of this soil support dense stands of hardwood or cypress trees but provide insufficient grazing.

This soil is not suited to urban and recreational uses because of ponding. The wetness limitation can be reduced or overcome by installing a drainage system to lower the surface water and internal water to an acceptable depth or by adding a suitable fill material in the depressions. The sandy texture is a severe limitation for recreational use and causes poor trafficability in unpaved areas. A suitable topsoil fill material should be used or some other type of surface stabilization is needed to overcome this limitation.

This Paisley soil is in capability subclass VIIw and in woodland suitability group 6W.

59—Arents, organic substratum. This soil is somewhat poorly drained to moderately well drained. It is around ditches and in low areas that have been filled. The mapped areas are irregular in shape and range from 10 to 50 acres. The slopes are smooth and range from 0 to 2 percent.

Arents, organic substratum, is highly variable in short distances, but one of the more common profiles is about 30 inches thick. It consists of mixed brown and dark gray fine sand and few organic bodies underlain by about 20 inches of black organic material and by brown and light brownish gray fine sand.

Included with this soil in mapping are small areas that have less than 20 inches of fill material overlying the natural soil. The included areas make up about 25 percent of the map unit.

This soil has a high water table within 20 to 40 inches of the surface during most of the year. The available water capacity is moderate. Permeability is rapid throughout. Natural fertility is low.

Most areas of this soil are used for urban development.

The limitations for most urban uses are variable because of a wide range of soil properties. Low strength and wetness are major limitations. Onsite investigation is necessary to determine the limitations and suitability of the soil.

This soil has not been assigned to a capability subclass, to a range site, or to a woodland suitability group.

60—Delray fine sand, depressional. This soil is nearly level and is very poorly drained. It is in wet depressional areas. The mapped areas are irregular in shape and range from 50 to 1,000 acres. The slopes are concave and range from 0 to 2 percent.

Typically, the surface layer is black and very dark gray fine sand about 16 inches thick. The subsurface layer, to a depth of about 60 inches, is grayish brown fine sand. The subsoil to a depth of about 80 inches is light brownish gray sandy clay loam.

Included with this soil in mapping are small areas of Basinger, Floridana, Pompano, and Placid soils. Also included are some areas of soils that are similar to Delray soil but have a muck surface. These soils occur near the center of the map unit. The included soils make up about 25 percent of this map unit.

This soil is ponded for more than 6 months during most years. The available water capacity is moderate.

Permeability is rapid in the surface and subsurface layers and is moderate or moderately rapid in the subsoil. Natural fertility is low.

Native vegetation is baldcypress, bay trees, various hardwoods, dense pickerelweed, arrowhead, and water lilies.

In its natural state, this Delray soil is not suited to cultivated crops or improved pasture because of ponding. Not only is wetness a very severe limitation, but drainage and water control are also severe problems. Water control systems are difficult to establish. Most areas of this soil are in isolated ponds that do not have suitable drainage outlets. A good water control system normally requires an extensive system of canals and ditches. With proper management, adapted grasses or grass-clover pastures can be grown if the areas can be adequately drained and a good water control system can be maintained.

This soil is not suited to pine trees because of ponding.

Typically, this soil is characterized by the Freshwater Marshes and Ponds range site. This site can be identified by an open expanse of grasses, sedges, rushes, and other herbaceous plants. If grazing is controlled, this site has the potential to produce more forage than any of the other range sites. Chalky bluestem and blue maidencane dominate the drier parts of the range site, and maidencane is the dominant plant in the wetter parts. Other desirable forage includes cutgrass, bluejoint panicum, sloughgrass, and low panicum. Periodic high water levels provide natural deferment from cattle grazing. Carpetgrass, an introduced plant, tends to dominate the drier parts of the site if the soil is overgrazed. Some areas of this soil that support dense stands of hardwood or cypress trees are poorly suited to rangeland.

Ponding is a severe limitation for urban and recreational uses. This limitation can be reduced by installing a drainage system to lower the high water table during wet periods or by adding a suitable fill material in the depressions. In addition, seepage should be controlled before using this soil for sanitary facilities because of the possibility of pollution of water supplies. The sandy texture is a severe limitation for recreational use and causes poor trafficability in unpaved areas. A suitable topsoil fill material should be used or some other type of surface stabilization is needed to overcome this limitation.

This Delray soil is in capability subclass VIIw and in woodland suitability group 3W.

61—EauGallie fine sand. This soil is nearly level and is poorly drained. It is on the broad flatwoods. The mapped areas are irregular in shape and range from 20 to 150 acres. The slopes are smooth and range from 0 to 2 percent.

Typically, the surface layer is black fine sand about 6 inches thick. The subsurface layer, to a depth of about 21 inches, is light gray and grayish brown fine sand. The upper part of the subsoil, to a depth of about 34 inches, is very dark brown and very dark grayish brown fine sand. The next layer, to a depth of about 50 inches, is grayish brown fine sand. The middle part, to a depth of about 53 inches, is light brownish gray fine sandy loam. The lower part, to a depth of about 65 inches, is light gray sandy clay loam. The substratum to a depth of 80 inches or more is light gray fine sandy loam.

Included with this soil in mapping are small areas of Immokalee, Myakka, Oldsmar, and Vero soils. Also included are areas of EauGallie soils that have random boulders. These areas are adjacent to a map unit that has a bouldery subsurface layer. The included soils make up about 20 percent of this map unit.

In most years, this soil has a high water table within 10 to 40 inches of the surface for more than 6 months and at a depth of less than 10 inches for 1 month to 4 months. The available water capacity is moderate. Permeability is rapid in the surface and subsurface layers. It is moderate or moderately rapid in the upper part of the subsoil and moderately slow in the lower part. Natural fertility is low.

Native vegetation is slash pine, longleaf pine, live oak, and water oak. The understory includes saw palmetto, gallberry, running oak, and pineland threeawn.

This EauGallie soil has very severe limitations for cultivated crops because of wetness. With good water control measures and soil-improving measures, this soil is well suited to many vegetable crops. A water control system is needed to remove excess water in wet periods and to provide water for surface irrigation in dry periods. Row crops should be rotated with close-growing, soil-improving cover crops. Soil-improving cover crops should be included in the rotation system three-fourths of the time. Conservation tillage helps to conserve moisture and controls plant damage from blowing soil. Seedbed preparation should include bedding of the rows. Fertilizer and lime should be applied according to the need of the crops.

This soil is well suited to pasture and hay crops. Pangolagrass, bahiagrass, and clover are well adapted to this soil, and grow well if they are properly managed. These grasses require a drainage system to remove excess surface water during heavy rains. They also require regular applications of fertilizer and lime. Grazing should be controlled to maintain plant vigor and to obtain high yields.

The potential of this soil for pine tree production is moderately high. Equipment use limitations, seedling mortality, and plant competition are concerns in management. Slash and loblolly pines are the most suitable trees to plant for commercial wood production.

Typically, this soil is characterized by the South Florida Flatwoods range site. This site can be identified by scattered pine trees and an understory of saw palmetto and grasses. This range site covers more land area than any of the other range sites in Florida. If grazing is controlled, the site has the potential to produce significant amounts of creeping bluestem, lopsided indiangrass, chalky bluestem, and various panicums. As range deterioration occurs because of overgrazing, the site is dominated by saw palmetto and pineland threeawn (wiregrass).

Wetness is a severe limitation for urban and recreational uses. This wetness limitation can be reduced or overcome by installing a drainage system to lower the high water table during wet periods. Mounding may be needed in places for septic tank absorption fields. Seepage should be controlled before using this soil for sanitary facilities because of the possibility of pollution of water supplies. The sandy texture is a severe limitation for recreational use and causes poor trafficability in unpaved areas. A suitable topsoil fill material should be used or some type of surface stabilization is needed to overcome this limitation.

This EauGallie soil is in capability subclass IVw and in woodland suitability group 10W.

62—**Urban land.** In this miscellaneous area, the original soil has been modified for urban development. Major soil properties that originally limited urban uses have been overcome in an acceptable manner.

Urban facilities, such as paved parking areas, streets, railroad tracks, houses, and shopping centers have been constructed on 80 percent or more of this map unit. In places not covered by urban facilities, the soils are so altered that identification is not feasible.

Urban land is primarily in downtown areas, shopping districts, and along main thoroughfares in towns. It is also in isolated shopping centers and small business areas. Small, less intensively developed areas and small areas of identifiable soils are in some places.

This miscellaneous area has not been assigned to a capability subclass, to a range site, or to a woodland suitability group.

63—**Floridana-Basinger association, frequently flooded.** This association consists of poorly drained and very poorly drained soils in regular and repeating patterns along the Withlacoochee and Little Withlacoochee Rivers. The Floridana soils are in the lowest positions on the landscape, and Basinger soils are in slightly higher positions. The mapped areas are mostly long and narrow but also include some broad areas near the mouth of the Little Withlacoochee River. Individual areas range from 20 to 50 acres.

Floridana soil is very poorly drained. This soil makes up about 65 percent of the association. Typically, the surface layer is black mucky fine sand about 5 inches thick underlain by very dark gray fine sand to a depth of about 11 inches. The subsurface layer, to a depth of about 26 inches, is gray fine sand. The subsoil to a depth of 80 inches is gray and light brownish gray sandy clay loam that has mottles in shades of yellow and brown.

During most years, Floridana soil has a high water table at a depth of less than 10 inches for 1 month to 4 months, and it is frequently flooded. Permeability is rapid in the surface layer and is slow or very slow in the subsoil. The available water capacity is moderate. Natural fertility is medium. The content of organic matter is high.

Basinger soil is poorly drained. This soil makes up about 20 percent of the association. Typically, the surface layer is very dark gray fine sand about 5 inches thick. The subsoil, to a depth of about 22 inches, is light brownish gray and brown sand. The substratum to a depth of 80 inches or more is dark grayish brown sand.

Basinger soil is rapidly permeable. The available water capacity is low. Natural fertility is low.

Included with these soils in mapping are small areas of Chobee, Delray, Malabar, and Pompano soils. Also included are some soils that have loamy fluvial material on the surface. The included soils make up about 15 percent of this map unit.

Native vegetation is cypress, water hickory, red maple, ironwood, sedges, ferns, poison ivy, trumpet creeper, pickerelweed, and various aquatic plants.

In their natural state, the soils in this association are not suitable for cultivated crops or improved pasture. These soils are susceptible to flooding, which severely restricts their use. If the hazard of flooding can be overcome, the soils can be used for improved pasture grasses.

These soils are not suited to pine trees because of wetness. Some type of drainage system and bedding of the soils, which helps to provide surface drainage, is needed before pine trees can be planted.

The soils in this map unit have not been assigned to a range site because of the heavy growth of understory in natural areas. This understory prevents satisfactory growth of range grasses.

Even if the soils in this association are protected from flooding and proper water control measures are used, they still have severe limitations to use as septic tank absorption fields and for trench sanitary landfills, sewage lagoons, shallow excavations, dwellings without basements, small commercial buildings, local roads and streets, and playgrounds. In addition, mounding is needed for septic tank absorption fields, sealing or lining with impervious material is needed for sewage lagoon areas, shoring of side slopes is needed for shallow excavations, and a suitable fill material is needed for dwellings without basements, small commercial buildings, local roads and streets, and playgrounds.

This Floridana soil is in capability subclass Vw and in woodland suitability group 3W. Basinger soil is in capability subclass VIw and in woodland suitability group 6W.

64—Gator muck. This soil is nearly level and is very poorly drained. It is in depressional areas. The mapped areas are irregular in shape and range from 10 to 100 acres. The slopes are smooth and range from 0 to 1 percent.

Typically, the surface layer, to a depth of about 38 inches, is dark reddish brown and very dark grayish brown muck. The underlying material, to a depth of about 42 inches, is gray fine sand and is gray and dark gray sandy clay loam and sandy loam to a depth of about 80 inches.

Included with this soil in mapping are small areas of Placid, Pompano, and Terra Ceia soils. The included soils make up about 15 percent of this map unit.

This soil has a high water table at a depth of less than 10 inches, or it is covered by water 6 to 12 months during most years. The available water capacity is high. Permeability is rapid in the organic layers. Natural fertility is moderate.

Native vegetation is pickerelweed, willow, sawgrass, lilies, and other water-tolerant plants.

In its natural state, this Gator soil is not suited to cultivated crops because of wetness. With adequate water control, this soil is well suited to most vegetable crops and sugarcane. A water control system is needed to remove excess water when crops are on the land and to keep the soil saturated at all other times. Fertilizers that contain phosphates, potash, and minor elements are needed. Water-tolerant cover crops should be planted when the soil is not in row crops.

In its natural state, this soil is not suited to use as improved pasture because of wetness; however, most improved grasses and clovers adapted to the area grow well on these soils if water is properly controlled. Pangolagrass, bahiagrass, and white clover grow well on this soil. A water control system is needed to help maintain the water table near the surface to prevent excessive oxidation of the organic horizons. Fertilizer high in potash, phosphorus, and the minor elements is needed. Grazing should be controlled to obtain maximum yields.

This soil is not suited to pine trees because of ponding.

Typically, this soil is characterized by the Freshwater Marshes and Ponds range site. This site can be identified by an open expanse of grasses, sedges, rushes, and other herbaceous plants. If grazing is controlled, this range site has the potential to produce more forage than any of the other range sites. Chalky bluestem and blue maidencane are dominant in the drier part of the range site, and maidencane is the dominant plant in the wetter parts. Other desirable forage includes cutgrass, bluejoint panicum, sloughgrass, and low panicum. Periodic high water levels provide natural deferment from cattle grazing. Carpetgrass, an introduced plant, tends to dominate the drier parts of the site if the soil is overgrazed. Some areas of this soil that support dense stands of hardwood or cypress trees are poorly suited to rangeland.

Excess humus and wetness are severe limitations for urban and recreational uses. Removal of organic material and backfilling will not overcome the wetness limitation unless a substantial amount of suitable fill material is used.

This Gator soil is in capability subclass VIIw but has not been assigned to a woodland suitability group.

65—Candler sand, bouldery subsurface, 0 to 5 percent slopes. This soil is nearly level to gently sloping and is excessively drained. It is on ridges, knolls, and broad uplands. The mapped areas are irregular in shape and range from 20 to 180 acres. Surface and subsurface boulders are about 60 to 250 feet apart. They occur randomly in small groups or individually. Although most boulders have been removed from the cropland and improved pasture, the remaining subsurface boulders can damage equipment that penetrates the soil. The slopes are smooth to broken.

Typically, the surface layer is gray sand about 3 inches thick. The upper part of the subsurface layer, to a depth of about 25 inches, is light yellowish brown sand. The lower part to a depth of about 80 inches or more is very pale brown sand. It has thin yellowish brown textural bands at a depth of more than 65 inches.

Included with this soil in mapping are small areas of Arredondo, Astatula, Lake, Millhopper, and Tavares soils. The included soils make up about 20 percent of this map unit.

This soil does not have a high water table within 80 inches of the surface. The available water capacity is very low. Permeability is rapid. Natural fertility is low.

Native vegetation is mostly turkey oak and scrub oak. The understory includes pineland threeawn and running oak.

This Candler soil has very severe limitations for cultivated crops. Droughtiness and rapid leaching of plant nutrients reduce crop yields. Boulders at or near the surface are a continuing nuisance during tillage operations. Most tillage operations are not impractical if the boulders are removed. If this soil is cultivated, row crops should be planted on the contour. Close-growing cover crops should be included in the rotation system at least three-fourths of the time. Soil-improving cover crops and the residue of other crops should be used to protect the soil from erosion. Irrigation of high-value crops is generally feasible if water is readily available.

This soil is moderately suited to pasture and hay crops. Deep-rooting plants, such as Coastal bermudagrass and bahiagrass, are well suited to this soil, but yields are reduced by periodic droughts. Regular applications of fertilizer and lime are needed. Grazing should be controlled to help maintain plant vigor. Boulders should be removed to help prevent equipment damage.

The potential of this soil is moderate for pine tree production. Equipment use limitations and seedling mortality are concerns in management. Sand pine, slash pine, and longleaf pine are the most suitable trees to plant for commercial woodland production.

Typically, this soil is characterized by the Longleaf Pine-Turkey Oak Hills range site. It is readily recognized by the landform and dominant vegetation of longleaf pine and turkey oak. Natural fertility is low because of the rapid movement of plant nutrients and water through the soil. Forage production and quality are poor, and cattle do not use this range site if other sites are available. Desirable forage includes creeping bluestem, lopsided indiangrass, and low panicum.

This soil has slight limitations for most urban uses. Seepage and cutbank caving are severe limitations to use of this soil for sewage lagoons or landfill areas. If used for sewage lagoons or landfill areas, the floor and sidewalls should be lined and sealed. Random large boulders or groups of boulders may require use of a modified installation design or an alternate site in the map unit for many urban uses. The sandy texture is a severe limitation for recreational use. Boulders on playgrounds are severe limitations. Wind erosion is a hazard if the surface soil is exposed. Establishing and maintaining windbreaks and a good vegetative cover and using a suitable topsoil fill material or some form of surface stabilization can reduce or overcome these limitations.

This Candler soil is in capability subclass IVs and in woodland suitability group 8S.

66—Arredondo fine sand, bouldery subsurface, 0 to 5 percent slopes. This soil is nearly level to gently sloping and is well drained. It is on the broad uplands. The mapped areas are wide and follow the contour of the uplands and range from 50 to 300 acres. Surface and subsurface boulders are about 60 to 250 feet apart. They occur randomly in small groups or individually. Although most boulders have been removed from the cropland and improved pasture, the remaining subsurface boulders can damage equipment that penetrates the soil. The slopes are convex and range from 0 to 5 percent.

Typically, the surface layer is very dark grayish brown fine sand about 8 inches thick. The subsurface layer, to a depth of about 58 inches, is brown, light yellowish brown, and brownish yellow fine sand. The subsoil to a depth of 80 inches or more is strong brown loamy fine sand and fine sandy loam.

Included with this soil in mapping are small areas of Candler, Kendrick, Lake, Millhopper, and Tavares soils. The included soils make up about 20 to 25 percent of this map unit.

In most years, this soil does not have a high water table within 72 inches of the surface. The available water capacity is low in the surface and subsurface layers. Permeability is rapid in the surface and subsurface layers and is moderate in the subsoil. Natural fertility is moderate.

Most of the acreage in this map unit is in improved pasture. Native vegetation is laurel oak, live oak, bluestem, dogfennel, paspalum, and threeawn.

This Arredondo soil has severe limitations for most cultivated crops. Boulders at or near the surface are a continuing nuisance during tillage operations. Most tillage operations are not impractical if the boulders are removed. Droughtiness and rapid leaching of plant nutrients limit the choice of plants and reduce crop yields. If this soil is cultivated, row crops should be planted on the contour. Close-growing cover crops should be included in the rotation system at least two-thirds of the time. Soil-improving cover crops and the residue of other crops should be used to protect the soil from erosion. Irrigation of high-value crops is generally feasible if water is readily available.

The soil is well suited to pasture and hay crops. Coastal bermudagrass and improved bahiagrass are well suited to this soil, but yields are reduced by periodic droughts. Grasses respond to regular applications of fertilizer and lime. Grazing should be controlled to maintain plant vigor and a good ground cover. Boulders should be removed to help prevent equipment damage.

The potential of this soil is moderately high for pine tree production. Equipment use limitations, seedling mortality, and plant competition are concerns in management. Slash, loblolly, and longleaf pines are the most suitable trees to plant for commercial wood production.

Typically, this soil is characterized by the Longleaf Pine-Turkey Oak Hills range site. It is readily recognized by the landform and dominant vegetation of longleaf pine and turkey oak. Natural fertility is low because of the rapid movement of plant nutrients and water through the soil. Forage production and quality are poor, and cattle do not use this range site if other sites are available. Desirable forage includes creeping bluestem, lopsided indiangrass, and low panicum.

This soil has slight limitations as sites for homes, septic tank absorption fields, and small commercial buildings and for local roads and streets. Seepage is a severe limitation to use of this soil for sewage lagoons or landfill areas. If used for sewage lagoons or landfill areas, the sandy sidewalls should be sealed. Random large boulders or groups of boulders may require use of a modified installation design or an alternate site in the map unit for many urban uses. The sandy texture is a severe limitation for recreational use and causes poor trafficability in unpaved areas. A suitable topsoil fill material should be used or some form of surface stabilization is needed to reduce or overcome this limitation.

This Arredondo soil is in capability subclass IIIs and in woodland suitability group 10S.

67—Vero fine sand. This soil is nearly level and is poorly drained. It is on the broad flatwoods. The mapped areas are irregular in shape and range from 10 to 100 acres. The slopes are smooth and range from 0 to 2 percent.

Typically, the surface layer is black fine sand about 4 inches thick. The subsurface layer, to a depth of 21 inches, is grayish brown fine sand. The upper part of the subsoil, to a depth of about 26 inches, is very dark brown loamy fine sand. The middle part, to a depth of about 32 inches, is light brownish gray fine sand. The lower part, to a depth of about 65 inches, is light gray and light brownish gray sandy clay loam that has mottles in shades of strong brown. The substratum to a depth of 80 inches or more is light gray fine sandy loam that has mottles in shades of strong brown.

Included with this soil in mapping are small areas of EauGallie and Paisley soils. Also included are areas of Vero soils that have random boulders. These areas are adjacent to a map unit that has a bouldery subsurface layer. The included soils make up about 20 percent of this map unit.

In most years, this soil has a high water table within 10 to 40 inches of the surface for more than 6 months and at a depth of less than 10 inches for 1 month to 4 months. The available water capacity is moderate. Permeability is rapid in the surface and subsurface layers. It is moderate or moderately rapid in the upper part of the subsoil and moderately slow in the lower part. Natural fertility is low.

Native vegetation is slash pine and longleaf pine. The understory includes saw palmetto, gallberry, waxmyrtle, and pineland threeawn.

This Vero soil has severe limitations for cultivated crops because of wetness. The adapted crops are limited unless very intensive management practices are used. With good water control measures and soil-improving measures, this soil is well suited to many vegetable crops. A water control system is needed to remove excess water in wet periods and to provide water for subsurface irrigation in dry periods. Row crops should be rotated with close-growing, soil-improving cover crops. Soil-improving cover crops should be included in the rotation system three-fourths of the time. Conservation tillage helps to conserve moisture and controls plant damage from blowing soil. Seedbed preparation should include bedding of the rows. Fertilizer and lime should be applied according to the need of the crops.

This soil is well suited to pasture and hay crops. Pangolagrass, bahiagrass, and clover are well adapted to this soil. These grasses and legumes grow well when they are properly managed. A drainage system to remove excess surface water during heavy rains must be provided, and regular applications of fertilizers and lime are needed. Grazing should be controlled to maintain plant vigor for maximum yields.

Potential of this soil is moderately high for pine tree production. Equipment use limitations, seedling mortality, and plant competition are concerns in management. Slash and longleaf pines are the most suitable trees to plant for commercial wood production.

Typically, this soil is characterized by the South Florida Flatwoods range site. This site can be identified by scattered pine trees and an understory of saw palmetto and grasses. If grazing is controlled, the site has the potential to produce significant amounts of creeping bluestem, lopsided indiangrass, chalky bluestem, and various panicums. As range deterioration occurs because of overgrazing, the site is dominated by saw palmetto and pineland threeawn (wiregrass). Some areas of this soil support dense stands of oak trees. This soil provides good shade and resting areas for cattle but does not provide sufficient grazing.

Wetness is a severe limitation for urban and recreational uses. This wetness limitation can be reduced or overcome by installing a drainage system to lower the high water table during wet periods. Mounding may be needed in places for septic tank absorption fields because of wetness and slow permeability. The sandy texture is also a severe limitation for recreational use and causes poor trafficability in unpaved areas. A suitable topsoil fill material should be used or some type of surface stabilization is needed to overcome this limitation.

This Vero soil is in capability subclass IIIw and in woodland suitability group 10W.

68—Chobee loamy fine sand, frequently flooded. This soil is very poorly drained and is nearly level. It is on river flood plains and in long, narrow depressions that are connected to the rivers by flood channels. The mapped areas are mostly long and narrow and tend to parallel the rivers. The slopes are smooth and range from 0 to 1 percent.

Typically, the surface layer is black loamy fine sand about 6 inches thick. The upper part of the subsoil, to a depth of about 11 inches, is very dark gray sandy clay loam. The middle part, to a depth of about 20 inches, is dark brown sandy clay loam that has dark yellowish brown mottles. The lower part, to a depth of about 41 inches, is gray to light gray sandy clay loam that has yellowish brown mottles and light gray nodules of calcium carbonate. The substratum to a depth of about 80 inches is light gray fine sandy loam that has yellowish brown mottles and white nodules of calcium carbonate.

Included with this soil in mapping are small areas of Floridana, Gator, and Nittaw soils. The included soils make up about 25 percent of this map unit.

The available water capacity is moderate. Permeability is moderately rapid in the surface layer and slow or very slow in the subsoil. Natural fertility is moderate.

Native vegetation is cypress, water oak, red maple, ironwood, and sweetgum. The understory includes aquatic plants, greenbrier, and poison ivy.

In its natural state, this Chobee soil is not suited to cultivated crops because of flooding and wetness. Without adequate drainage and a flood control system, the adapted crops are very limited. The water control system is needed to remove excess surface water rapidly after heavy rains and to provide subsurface drainage. Seedbed preparation should include bedding of the rows. Good conservation practices, in addition to water control measures, should be used if this soil is cultivated. Close-growing, soil-improving cover crops should be included in the rotation system at least two-thirds of the time. Fertilizer should be applied according to the need of the crops. Cover crops and residue of other crops should be used to maintain organic matter content and to protect the soil from erosion.

In its natural state, this soil is not suited to improved pastures. If flood control along with drainage is provided, this soil is well suited to pasture. Pangolagrass, bahiagrass, and clover grow well on this soil if properly managed. Regular applications of fertilizers and lime are needed. Grazing should be controlled to maintain plant vigor and to obtain maximum yields.

The potential of this soil for the production of slash pine trees is moderate. Good management practices should include bedding of rows to help provide surface drainage. A water control system is needed to reduce the hazard of flooding and to remove excess surface water.

This soil has not been assigned to a range site because of the heavy growth of overstory in natural areas. This overstory prevents satisfactory growth of range grasses.

This soil is poorly suited to urban and recreational uses because of wetness and the hazard of flooding. These limitations can be reduced or overcome by providing a flood control system and drainage system. A suitable fill material may also be needed. Slow percolation limits the use of this soil as septic tank absorption fields.

This Chobee soil is in capability subclass Vw and in woodland suitability group 6W.

Use and Management of the Soils

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help avoid soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavior characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis for predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as rangeland and woodland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreation facilities; and for wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern that is in harmony with nature.

Contractors can use this survey to locate sources of sand and gravel, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

Crops and Pasture

John D. Lawrence, conservation agronomist, and H.G. Roane, conservationist, Soil Conservation Service, helped prepare this section.

General management needed for crops and pasture is suggested in this section. The crops or pasture plants best suited to the soils, including some not commonly grown in the survey area, are identified; the system of land capability classification used by the Soil Conservation Service is explained; and the estimated yields of the main crops and hay and pasture plants are listed for each soil.

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil under Detailed Soil Map Units." Specific information can be obtained from the local office of the Soil Conservation Service or the Cooperative Extension Service.

Approximately 150,000 acres in Sumter County was used for crops and pasture according to the 1980 Census of Agriculture, the Sumter County Extension Service estimates, and the Florida Agricultural Statistics, Florida Crop and Livestock Reporting Service. Of this total, 110,000 acres was used for pasture; less than 1,000 acres for citrus; and 40,000 acres for special crops, mainly vegetables, such as cucumbers, watermelons (fig. 11), peppers, squash, and eggplant. Smaller acreages were planted in peas, sod, and nursery plants.

The potential of the soils in Sumter County for increased food production is good. About 100,000 acres of potentially good cropland could be added to the present cropland acreage. For satisfactory crop production, all of this acreage would require irrigation, intensive conservation measures to prevent soil blowing, and relatively high applications of fertilizer. About one-third of this acreage would also require flood control and subsurface drainage in addition to irrigation. In addition to the reserve capacity represented by this land, food production could be increased considerably by extending the latest agricultural technology to all cropland in the county. This soil survey can greatly facilitate the application of such technology.

Acreage in crops, pasture, and woodland has gradually been decreasing as more and more land is used for urban development. In 1982, an estimated 9,075 acres of urban and built-up land was in the county. According to Central Florida Regional Planning Council estimates, this acreage has been increasing about 10 percent per year, for the past 10 years. The use of this soil survey to help make land use decisions that will influence the future role of farming in the county is discussed in the section General Soil Map Units."

Soil erosion is a problem on the more sloping soils if the soil surface is not protected by growing crops or by leaving crop residue on the surface. Erosion is a hazard

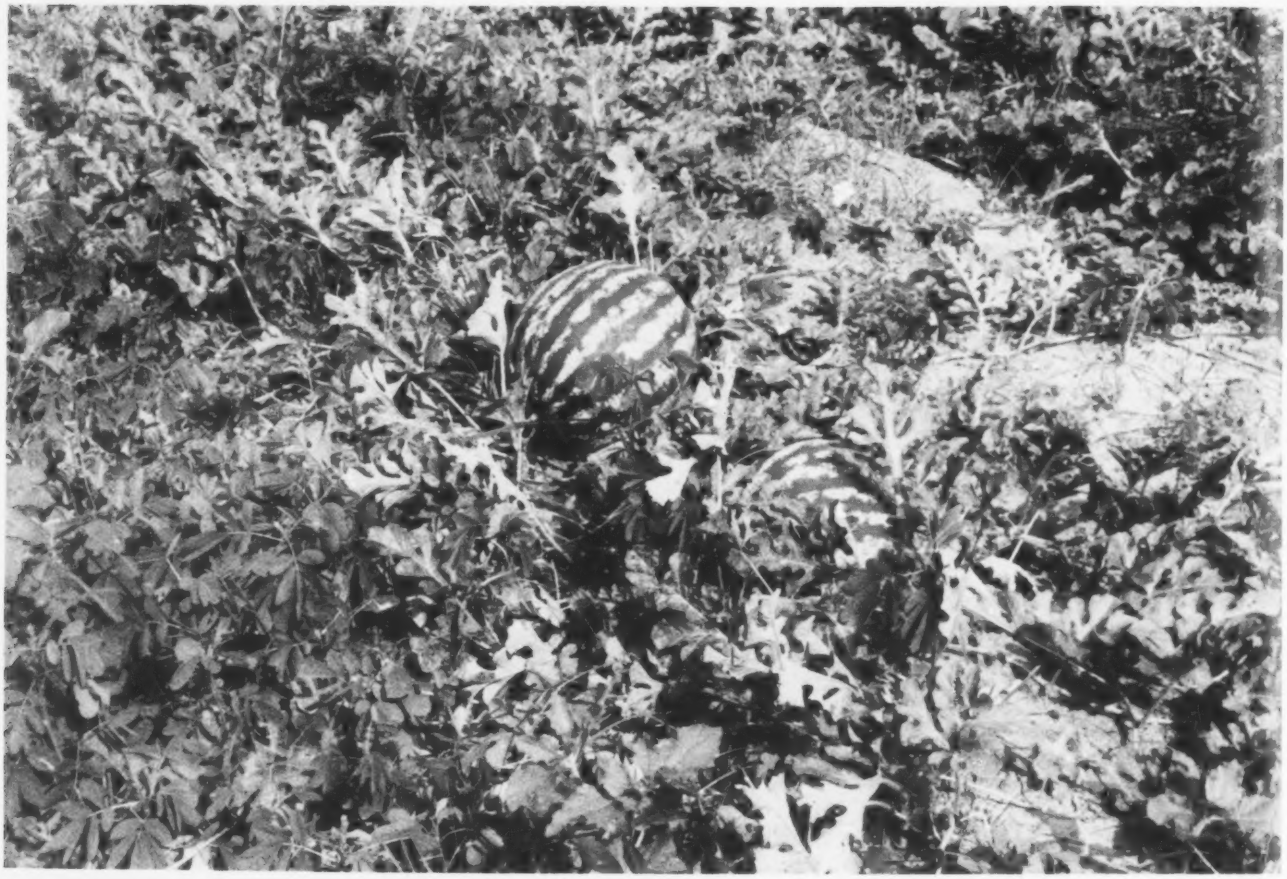

Figure 11.—Watermelons can be grown on a droughty soil if the soil is irrigated. This soil is Lake fine sand, 0 to 5 percent slopes.

on Apopka, Candler, Millhopper, Tavares, and Sparr soils that have slope of more than 2 percent.

Loss of soil by erosion reduces crop productivity and increases pollution. Productivity is reduced as the surface is lost and organic matter is reduced as part of the subsoil is incorporated into the plow layer. If erosion is controlled, the pollution of streams by sediment can be reduced and the quality of water for municipal use, for recreation, and for fish and wildlife can be improved.

Conservation practices, such as maintaining a vegetative cover on the surface layer, reducing runoff, and increasing infiltration, will help control erosion. A cropping system that keeps vegetative cover on the surface for extended periods can hold soil erosion losses to amounts that do not reduce the productive capacity of the soils. On livestock farms, legume and grass forage crops should be included in the cropping system to reduce erosion on sloping land, provide nitrogen, and improve tilth for the following crop.

Conservation tillage leaves crop residue on the surface, increases infiltration, and reduces runoff and subsequent erosion. This practice can be adapted to most soils in the county.

Soils in Sumter County are too sandy and slopes are too short and irregular for contour tillage or terracing. Stripcropping and diversions reduce the length of slope, reduce runoff, and help control erosion. Contour farming and terracing are more practical on deep, well drained soils that have regular slopes. On many fields, diversions and grassed waterways reduce runoff and help control erosion. These conservation practices can be adapted to most soils in the county.

Wind erosion is a major hazard on the sandy and organic soils. Wind can damage soils and tender crops in a few hours in open, unprotected areas if the wind is strong and the soil is dry and bare of vegetation or surface mulch. Maintaining vegetative cover or surface mulch minimizes wind erosion.

Wind erosion is damaging for several reasons. It reduces soil fertility by removing the finer soil particles and the organic matter; damages or destroys crops by sandblasting (fig. 12); spreads diseases, insects, and weed seeds; and creates health hazards and cleaning problems. Control of wind erosion minimizes the damage that duststorms can cause and improves the quality of the air for a more healthful environment.

Field windbreaks of adapted trees and shrubs, such as Carolina laurelcherry, slash pine, southern redcedar, Japanese privet, and strip crops of small grain, are effective in reducing wind erosion and crop damage. Field windbreaks and strip crops are planted at right angles to the prevailing wind and at specific intervals across the field. The intervals depend on the erodibility of the soil and the susceptibility of the crop to damage from sandblasting.

Information about conservation practices to control erosion on each kind of soil in the county is available in the local offices of the Soil Conservation Service.

Soil drainage is a major concern in management on most of the acreage used for crops and pasture in the county. Some soils that are naturally wet restrict production of many crops common to the area. The poorly drained soils in Sumter County are Basinger, EauGallie, Ft. Green, Immokalee, Myakka, Paisley, Pompano, Smyrna, and Vero soils; and the very poorly drained soils are Basinger, Chobee, Delray, Floridana, Placid, and Pompano soils.

During the rainy seasons, excessive wetness in the root zone of some of the somewhat poorly drained soils causes crop damage in most years unless the soils are artificially drained. Included in this category are Adamsville, Seffner, and Sparr soils. Also, the excessive wetness during the rainy seasons in some of the poorly drained soils causes some damage to pasture plants if these soils are not artificially drained. The poorly drained soils in the county are mainly Basinger, EauGallie, Myakka, Ona, Paisley, Smyrna, and Vero soils. These soils have a low available water capacity and are droughty during dry periods. It is necessary to irrigate these soils for adequate crop production.

The very poorly drained soils, such as Chobee, Delray, Floridana, Gator, Nittaw, Okeelanta, Placid, and Terra Ceia soils, are very wet during rainy seasons. Water

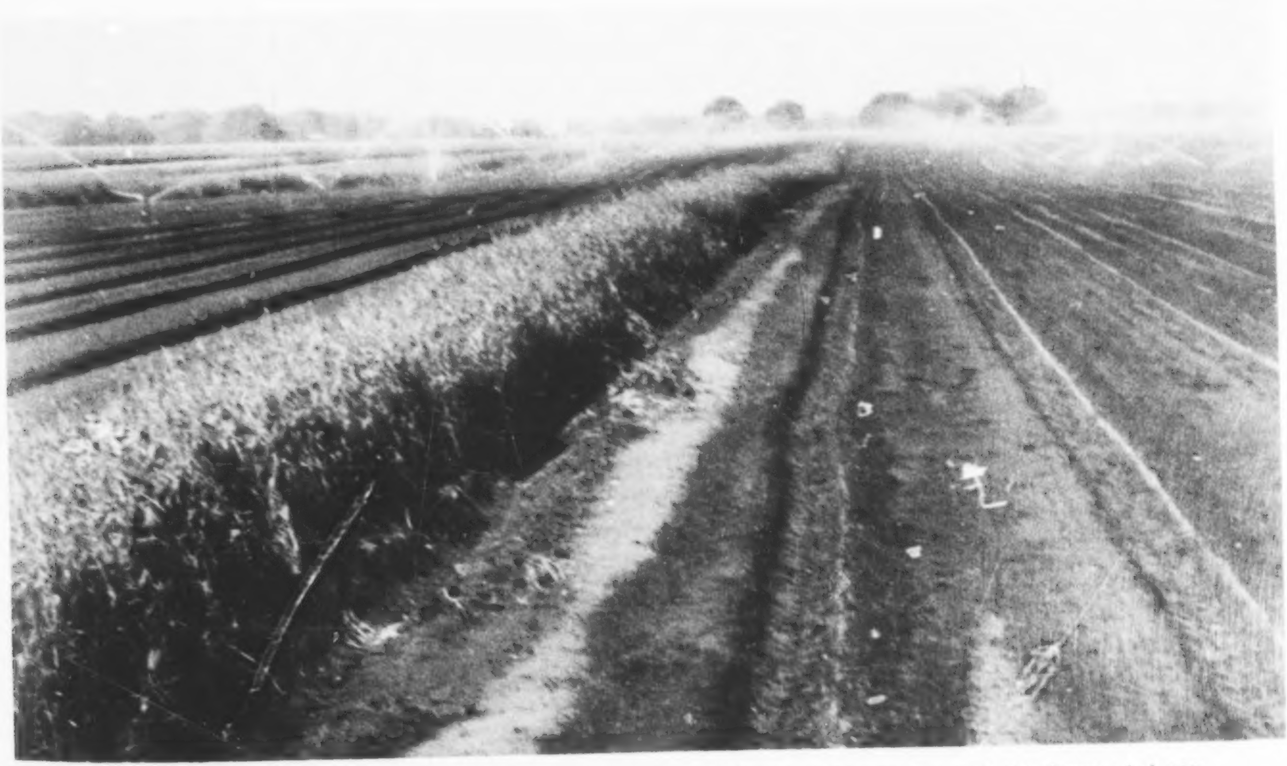

Figure 12.—This strip of rye is used to protect seedlings from wind damage on Tavares fine sand, 0 to 5 percent slopes.

stands on the surface in some areas and the production of good quality pasture is not possible without artificial drainage.

The design of surface drainage and subsurface irrigation systems varies with the kind of soil and the crops grown. A combination of surface drainage and subsurface irrigation systems is needed for intensive pasture production. Information on the drainage and irrigation for each kind of soil is available in the local offices of the Soil Conservation Service.

Soil fertility is naturally low on most soils in the county. Most of the soils have a sandy surface layer and are light in color. Some of the soils have a loamy subsoil. In this category are the Apopka, Arredondo, Ft. Green, Millhopper, and Sparr soils. The Adamsville, Astatula, Candler, Florahome, Lake, Placid, Pompano, Seffner, and Tavares soils have sandy material at a depth of 80 inches or more. The Basinger, EauGallie, Electra, Myakka, Ona, Pomello, Pompano, Smyrna, and Vero soils have an organically stained layer in the sandy subsurface layer. Most soils have a surface layer that is strongly acid to very strongly acid. If the soils have never been limed, the application of ground limestone to raise the pH level for good crop growth is required. Nitrogen, potash, and available phosphorus levels are naturally low in most of these soils. On all soils, additions of lime and fertilizer should be based on the results of soil tests, on the needs of the crops, and on the expected level of yields. The Cooperative Extension Service can help in determining the kinds and amounts of fertilizer and lime to apply.

Soil tilth is an important factor in the germination of seeds, root development, and the infiltration of water into the soil. Soils that have good tilth are granular and porous, which reflect the benefits of organic matter.

Most soils in the county have a sand or loamy sand surface layer that is light in color and low to moderate in organic matter content except the Chobee, Delray, Floridana, Gator, Monteocha, Nittaw, Okeelanta, Placid, Tarrytown, and Terra Ceia soils. The Chobee, Delray, Floridana, Monteocha, and Placid soils have a dark surface layer and a high content of organic matter. The Nittaw, Okeelanta, and Terra Ceia soils are organic soils and have a muck surface layer. The Tarrytown soil has a loamy surface layer.

Generally, the structure of the surface layer of most soils in the county is weak. In dry soils that are low in organic matter content, heavy rains can cause the colloidal matter to cement and form a slight crust. The crust is slightly hard when it is dry, and it is slightly impervious to water. Once the crust forms, it reduces infiltration and increases runoff. Regular additions of crop residue, manure, and other organic material can help to improve soil structure and to reduce crust formation.

Fall plowing is generally not a good practice in the county. About one-fourth of the cropland is on soils that are subject to damaging erosion if they are plowed at this time. Also, about three-fourths of the county's crops are grown on soils that are sandy and are subject to wind erosion.

In many map units, bouldery subsurface" (fig. 13) is used to indicate random boulders within 20 inches of the soil surface. To use these soils and avoid equipment damage, it is important to consider the feasibility of removing the boulders.

Many areas of this county that are in pasture or cropland have undergone removal operations. It is important to remember that the rancher or farmer must be cautious of boulders that were overlooked during previous removal operations.

Field crops grown in the county are limited. The acreage in corn, grain, sorghum, sunflowers, and sugarcane can be increased if economic conditions are favorable.

Rye is the common close-growing crop that is grown in Sumter County. Wheat, oats, and triticale can also be grown.

Special crops grown commercially in the county are mainly citrus, watermelons, cucumbers, and peppers. A small acreage of squash, eggplant, cabbage, field peas, snap beans, grapes, nursery plants, and sod are also grown. If economic conditions are favorable, the acreage in grapes, nursery plants, sod, cabbage, cauliflower, collards, turnips, and mustard greens can be increased.

Deep soils that have good natural drainage, such as Arredondo and Lake soils that have slope of less than 5 percent, are especially well suited to many vegetables and small fruits if irrigated. If irrigated, Florahome, Millhopper, and Tavares soils are well suited to vegetables and citrus. In addition, if adequate water control is provided, Adamsville, EauGallie, Ft. Green, Immokalee, Myakka, Ona, Seffner, Smyrna, and Vero soils are also well suited to vegetables and citrus. Gator and Terra Ceia soils are well suited to vegetables if an adequate water control system can be established and maintained.

Most of the well drained and moderately well drained soils in the county are suitable for citrus and nursery plants; however, because of the low winter temperatures in Sumter County, the production of crops that are subject to damage by cold weather is very hazardous.

The latest information and suggestions for growing special crops can be obtained from local offices of the Cooperative Extension Service and the Soil Conservation Service.

Pastures are used to produce forage for beef and dairy cattle. Beef cattle cow-calf operations are the major cattle systems. Coastal bermudagrass and bahiagrass are the major pasture plants grown in the county. Grass seeds are harvested from bahiagrass for improved pasture plantings and for commercial purposes. Coastal bermudagrass is harvested during the summer to use as winter feed.

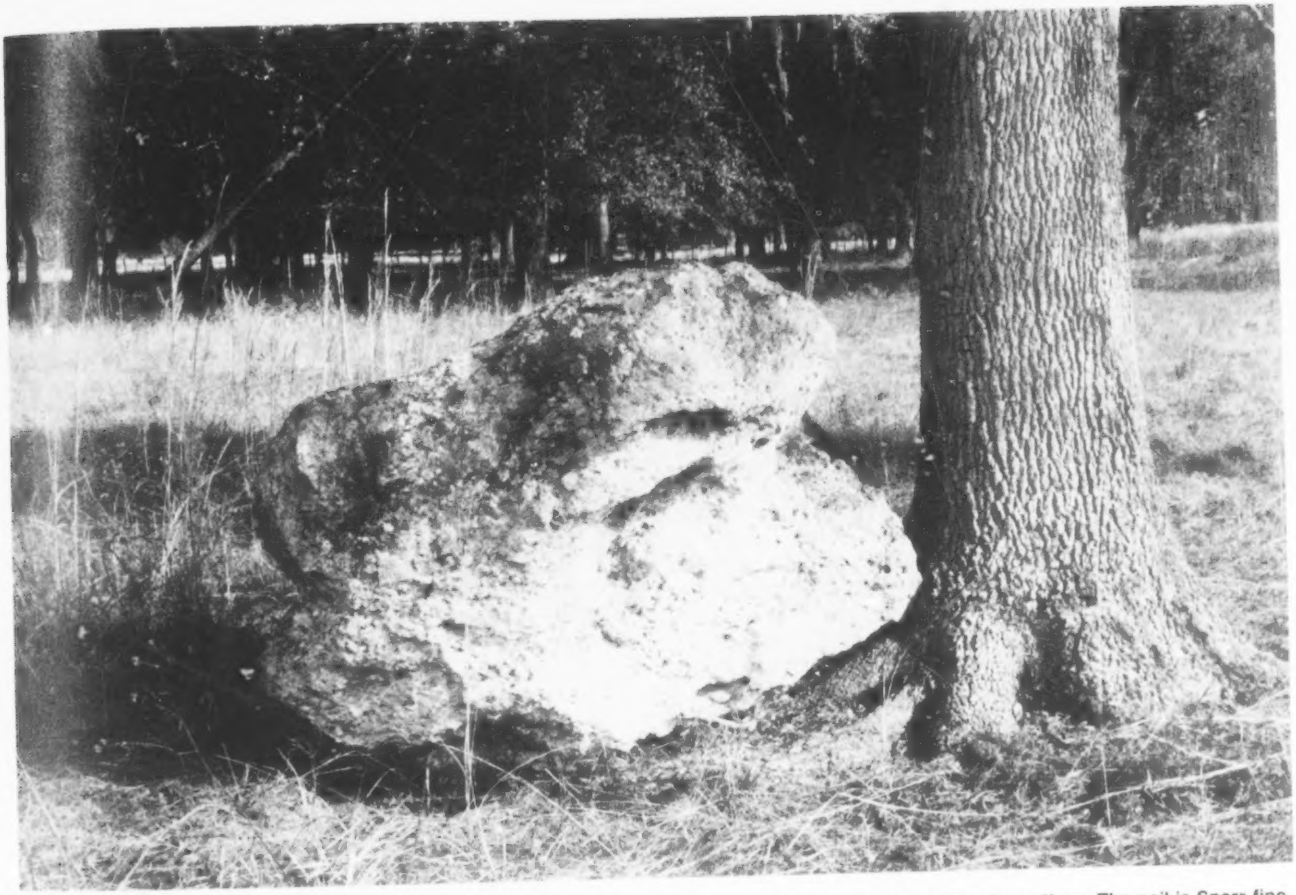

Figure 13.—**Large relocated boulders are in soils throughout Sumter County. They affect many agricultural practices. The soil is Sparr fine sand, bouldery subsurface, 0 to 5 percent slopes.**

In Sumter County, Apopka, Candler, and Tavares soils are well suited to bahiagrass and improved bermudagrass. With good management, hairy indigo and alyce clover can be grown during the summer and fall. Adamsville, Seffner, and Sparr soils are well suited to bahiagrass and improved bermudagrass. These grasses can be grown with legumes, such as sweet clover, if the soils are adequately limed and fertilized.

If properly drained, Basinger, EauGallie, Ft. Green, Kanapaha, Immokalee, Myakka, Ona, Pompano, Smyrna, and Vero soils are well suited to bahiagrass and limpograss. If these soils are adequately limed and fertilized, they are well suited to legumes, such as white clover. Irrigation increases the length of the growing season and also increases forage production.

Improved pasture in many parts of the county has been greatly depleted by continuous overgrazing. Pasture yields can be increased by applying lime and fertilizer as needed, by including forage crops and legumes in the cropping system, and by irrigating during the dry periods. Differences in the amount and kind of forage produced are related closely to the kind of soil. Effective management should be based on the relationship among soils, pasture plants, lime, fertilizer, and moisture. Stocking rates and grazing rotation systems must be considered for effective management. Latest information and suggestions about pasture management can be obtained from the local offices of the Cooperative Extension Service and the Soil Conservation Service.

Crop and pasture yields expected under a high level of management are shown in table 4. The yields are in animal-unit-months (AUM). An animal unit is the amount of forage required to feed one cow and her calf.

Yields Per Acre

The average yields per acre that can be expected of the principal crops under a high level of management are shown in table 4. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors.

The yields are based mainly on the experience and records of farmers, conservationists, and extension agents. Available yield data from nearby counties and results of field trials and demonstrations are also considered.

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include drainage, erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure, and green manure crops; and harvesting that insures the smallest possible loss.

For yields of irrigated crops, it is assumed that the irrigation system is adapted to the soils and to the crops grown, that good quality irrigation water is uniformly applied as needed, and that tillage is kept to a minimum.

The estimated yields reflect the productive capacity of each soil for each of the principal crops. Yields are likely to increase as new production technology is developed. The productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in table 4 are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Soil Conservation Service or of the Cooperative Extension Service can provide information about the management and productivity of the soils for those crops.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for use as cropland. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major, and generally expensive, landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for rangeland, for woodland, and for engineering purposes.

In the capability system, soils are generally grouped at three levels: capability class, subclass, and unit. Only class and subclass are used in this survey. These levels are defined in the following paragraphs.

Capability classes, the broadest groups, are designated by Roman numerals I through VII. The numerals indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class I soils have few limitations that restrict their use.

Class II soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.

Class III soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both.

Class IV soils have very severe limitations that reduce the choice of plants or that require very careful management, or both.

Class V soils are not likely to erode, but they have other limitations, impractical to remove, that limit their use.

Class VI soils have severe limitations that make them generally unsuitable for cultivation.

Class VII soils have very severe limitations that make them unsuitable for cultivation.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, *e*, *w*, or *s*, to the class numeral, for example, IIe. The letter *e* shows that the main limitation is risk of erosion unless a close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); and *s* shows that the soil is limited mainly because it is shallow, droughty, or stony.

There are no subclasses in class I because the soils of this class have few limitations. The soils in class V are subject to little or no erosion, but they have other limitations that restrict their use to pasture, rangeland, woodland, wildlife habitat, or recreation. Class V contains only the subclasses indicated by *w* or *s*.

The acreage of soils in each capability class and subclass is shown in table 5. The capability classification of each map unit is given in the section Detailed Soil Map Units."

Rangeland and Grazable Woodland

Steve Mozley, range conservationist, Soil Conservation Service, helped prepare this section.

Native range plants are an important part of the year-round supply of forage to livestock producers in Sumter County. This forage is readily available. It is economical and provides important roughage needed by cattle. About 143,280 acres throughout the county is used as native range by domestic livestock. Of this acreage, about 54,280 acres is used strictly as rangeland. The remaining 89,000 acres is grazable woodland.

In areas that have similar climate and topography, differences in the kind and amount of vegetation produced on rangeland are closely related to the kind of soil. The dominant native forage plants that grow on a particular soil generally are the most productive and the most suitable for livestock. These plants will maintain themselves as long as the environment is not altered from its natural condition. Improper burning, drainage, and grazing are examples of practices that can cause these alterations. Effective management is based on the relationship between the soils and vegetation and water.

The native forage plants are grouped into three categories according to their response to grazing—decreasers, increasers, and invaders. *Decreasers* generally are the most palatable plants to livestock, and they decrease in abundance if the rangeland is under continuous heavy grazing. *Increasers* are plants less palatable to livestock, and they increase for a while under continuous heavy grazing but eventually decrease. *Invaders* are the least palatable plants. These invaders tend to increase as the range site deteriorates from excessive grazing over a period of years.

Range condition is a measure of the current productivity of the range in relation to its potential or climax condition. The more closely the existing community resembles the climax community, the better the range condition. Four condition classes are used to measure range condition. These classes are—

- Excellent condition—producing 76 to 100 percent of the potential
- Good condition—producing 51 to 75 percent of the potential
- Fair condition—producing 26 to 50 percent of the potential
- Poor condition—producing 0 to 25 percent of the potential

The ecological plant communities that produce significant amounts of native forage suitable for grazing are referred to as range sites. Table 6 shows those soils that are associated with the different range sites and their potential for producing livestock forage. In table 6, yields are expressed in terms of pounds of air-dry herbage per acre for range in excellent condition for favorable, normal, and unfavorable years. Favorable years are those in which climatic factors, such as rainfall and temperatures, are favorable for plant growth. Forage refers to total vegetation produced whether or not it is palatable to grazing animals and does not reflect forage value or grazing potential.

Total production is the amount of vegetation that can be expected to grow annually on well managed rangeland that is supporting the potential natural plant community. It includes grasses and forbs and the current year's growth of leaves, twigs, and fruits of woody plants. It does not include the increase in stem diameter of trees and shrubs.

The seven native range sites in Sumter County are Freshwater Marshes and Ponds, Longleaf Pine-Turkey Oak Hills, South Florida Flatwoods, Oak Hammock, Sand Pine Scrub, Slough, and Upland Hardwood Hammock. Each range site produces a climax plant community that differs from the other plant communities in the kinds and amounts of range plants it produces. The relationship between soils and vegetation was established during this survey; thus, range sites generally can be determined directly from the soil map. Soil properties that affect moisture supply and plant nutrients have the greatest influence on the productivity of range plants. The wettest soils, such as those in the freshwater marshes, produce the most vegetation. The deep, droughty soils, such as those on the upland sand ridges, produce the least amount of forage annually.

Range management requires a knowledge of the kinds of soil and of the climax plant community. It also requires an evaluation of the present range condition. The objective in range management is to control grazing so that the plants growing on a site are about the same in kind and amount as the climax plant community for that site. Such management generally results in the optimum production of vegetation, conservation of water, and control of water and wind erosion. Sometimes, however, a range condition somewhat below the potential meets grazing needs, provides wildlife habitat, and protects soil and water resources.

Grazable woodland is forest that has an understory of native grasses, legumes, and forbs. The understory is an integral part of the forest plant community. The native plants can be grazed without significantly impairing other forest values. On such forest land, grazing is compatible with timber management if it is controlled or managed in such a manner that timber and forage resources are maintained or enhanced.

Understory vegetation consists of grasses, forbs, shrubs, and other plants used by livestock or by grazing or browsing wildlife. A well managed woodland area can produce enough understory vegetation to supply food to large numbers of livestock and wildlife.

The amount of forage production varies according to the different kinds of grazable woodland; the amount of shade cast by the canopy; the accumulation of fallen needles; the influence of time and intensity of grazing on the herbage; the number, size, and spacing of tree plantings; and the method used for site preparation.

Woodland Management and Productivity

Albert Lunday, Sumter County forester, Florida Division of Forestry, and Broward Miller, past president of the Sumter County Historical Society, helped prepare this section.

This section contains information about the relationship between soils and trees. It informs landowners and operators of the capability of soils to produce trees and suggests suitable management practices.

According to the Florida Statistical Abstract *(16)* about 170,500 acres of commercial forest land is in Sumter County. This is about 47 percent of the total acreage in the county.

Between 1936 and 1939, the United States Department of Agriculture purchased some cutover, burned-over timber land in Sumter County and in three adjoining counties to be used as a demonstration unit to promote proper land use. Approximately 30,000 acres in Sumter County was included in the Withlacoochee Land Use Project. The Withlacoochee Land Use Project was first managed by the Soil Conservation Service and later by the Forest Service. Their mission was to carry out programs and practices in timber and wildlife management.

In 1958, the State of Florida purchased the property and designated it as the Withlacoochee State Forest. The forest is managed by the State Division of Forestry, which uses the multiple-use concept of timber management, wildlife management, and forest-related recreation management.

A well-managed stand of trees prevents soil deterioration and helps to conserve soil and water resources. The main function of good trees is to protect the soil. Trees slow the fall of rain and allow the soil to absorb more moisture. Erosion is not a problem on most forest land in the county, but the ability of tree cover to allow more moisture to enter the soil is important to maintaining ground water supplies. Properly managed forests are an important part of the economy of the county. Practices to be considered in achieving proper management are discussed briefly in this section.

Trees and ground cover are destroyed by uncontrolled wildfires. Growth is slowed in the trees that are not killed, or they can be scarred. This allows the entry of insects and diseases, particularly in stands of hardwoods. Fire lessens the ability of the soil to absorb water and consumes litter that contributes organic matter to the soil.

Countywide fire protection is furnished by the State Division of Forestry. Individual landowners, however, should observe all the rules of fire protection. Firebreaks should be constructed and maintained around and through all woodland. These firebreaks can slow or stop a fire under normal conditions. Prescribed burning should be practiced with the advice and assistance of the State Division of Forestry or qualified consultant foresters.

Extensive reforestation has taken place in the Green Swamp area on land in the Withlacoochee State Forest, and on land in the Southwest Florida Water Management District. This area gets very wet at times, and the use of bedding may be necessary prior to the planting of pine seedlings. Slash pine is the primary tree planted in this area.

Most of the woodland in the county is understocked and in need of stand improvement. Tree farming is a good land use in many areas. Idle land can be profitably used to grow desirable trees. Pine can grow on a variety of soils and, once established, require a minimum of care.

To profit most from tree farming, a woodland owner should use proper cutting practices. These practices vary with the condition of the woodland. Detailed information on soils and forest management can be obtained from the local offices of the Soil Conservation Service and the Florida Division of Forestry.

Soils vary in their ability to produce trees. Depth, fertility, texture, and the available water capacity influence tree growth. Elevation, aspect, and climate determine the kinds of trees that can grow on a site. Available water capacity and depth of the root zone are major influences of tree growth. Elevation and aspect are of particular importance in mountainous areas.

This soil survey can be used by woodland managers planning ways to increase the productivity of forest land. Some soils respond better to fertilization than others, and some are more susceptible to erosion after roads are built and timber is harvested. Some soils require special efforts to reforest. In the section Detailed Soil Map Units," each map unit in the survey area suitable for producing timber presents information about productivity, limitations for harvesting timber, and management concerns for producing timber. The common forest understory plants are also listed. Table 7 summarizes this forestry information and rates the soils for a number of factors to be considered in management. *Slight, moderate*, and *severe* are used to indicate the degree of the major soil limitations to be considered in forest management.

The first tree listed for each soil under the column Important trees" is the indicator species for that soil. An indicator species is a tree that is common in the area and that is generally the most productive on a given soil.

Table 7 lists the *ordination symbol* for each soil. The first part of the ordination symbol, a number, indicates the potential productivity of a soil for the indicator species in cubic meters per hectare. The larger the number, the greater the potential productivity. Potential productivity is based on the site index and the point where mean annual increment is the greatest.

The second part of the ordination symbol, a letter, indicates the major kind of soil limitation for use and management. The letter *W* indicates a soil in which excessive water, either seasonal or year-round, causes a significant limitation. The letter *S* indicates a dry, sandy soil. The letter *A* indicates a soil that has no significant restrictions or limitations for forest use and management. If a soil has more than one limitation, the priority is as follows: W and S.

Ratings of the *erosion hazard* indicate the probability that damage may occur if site preparation activities or harvesting operations expose the soil. The risk is *slight* if no particular preventive measures are needed under ordinary conditions; *moderate* if erosion control measures are needed for particular silvicultural activities; and *severe* if special precautions are needed to control erosion for most silvicultural activities. Ratings of *moderate* or *severe* indicate the need for construction of higher standard roads, additional maintenance of roads, additional care in planning of harvesting and reforestation operations, or use of specialized equipment.

Ratings of *equipment limitation* indicate limits on the use of forest management equipment, year-round or seasonal, because of such soil characteristics as slope, wetness, stoniness, or susceptibility of the surface layer to compaction. As slope gradient and length increase, it becomes more difficult to use wheeled equipment. On the steeper slopes, tracked equipment must be used. On the steepest slopes, even tracked equipment cannot operate; more sophisticated systems are needed. The rating is *slight* if equipment use is restricted by soil wetness for less than 2 months and if special equipment is not needed. The rating is *moderate* if slopes are steep enough that wheeled equipment cannot be operated safely across the slope, if soil wetness restricts equipment use from 2 to 6 months per year, if stoniness restricts ground-based equipment, or if special equipment is needed to avoid or reduce soil compaction. The rating is *severe* if slopes are steep enough that tracked equipment cannot be operated safely across the slope, if soil wetness restricts equipment use for more than 6 months per year, if stoniness restricts ground-based equipment, or if special equipment is needed to avoid or reduce soil compaction. Ratings of *moderate* or *severe* indicate a need to choose the most suitable equipment and to carefully plan the timing of harvesting and other management operations.

Ratings of *seedling mortality* refer to the probability of death of naturally occurring or properly planted seedlings of good stock in periods of normal rainfall as influenced by kinds of soil or topographic features. *Seedling mortality* is caused primarily by too much water or too little water. The factors used in rating a soil for seedling mortality are texture of the surface layer, depth and duration of the water table, rock fragments in the surface layer, rooting depth, and the aspect of the slope. Mortality generally is greatest on soils that have a sandy or clayey surface layer. The risk is *slight* if, after site preparation, expected mortality is less than 25 percent; *moderate* if expected mortality is between 25 and 50 percent; and *severe* if expected mortality exceeds 50 percent. Ratings of *moderate* or *severe* indicate that it may be necessary to use containerized or larger than usual planting stock or to make special site preparations, such as bedding, furrowing, installing surface drainage, or providing artificial shade for seedings. Reinforcement planting is often needed if the risk is *moderate* or *severe*.

Ratings of *windthrow hazard* consider the likelihood of trees being uprooted by the wind. Restricted rooting depth is the main reason for windthrow. Rooting depth can be restricted by a high water table, fragipan, or bedrock, or by a combination of such factors as soil wetness, texture, structure, and depth. The risk is *slight* if strong winds cause trees to break but do not uproot them; *moderate* if strong winds cause an occasional tree to be blown over and many trees to break; and *severe* if moderate or strong winds commonly blow trees over. Ratings of *moderate* or *severe* indicate the need for care in thinning or possibly not thinning. Specialized equipment may be needed to avoid damage to shallow root systems in partial cutting operations. A plan for periodic salvage of windthrown trees and the maintenance of a road and trail system may be needed.

Ratings of *plant competition* indicate the likelihood of the growth or invasion of undesirable plants. *Plant competition* becomes more severe on the more productive soils, on poorly drained soils, and on soils having a restricted root zone that holds moisture. The risk is *slight* if competition from undesirable plants reduces adequate natural or artificial reforestation but does not necessitate intensive site preparation and maintenance. The risk is *moderate* if competition from undesirable plants reduces natural or artificial reforestation to the extent that intensive site preparation and maintenance are needed. The risk is *severe* if competition from undesirable plants prevents adequate natural or artificial reforestation unless the site is intensively prepared and maintained. A *moderate* or *severe* rating indicates the need for site preparation to ensure the development of an adequately stocked stand. Managers must plan site preparation measures to ensure reforestation without delays.

The potential productivity of *common trees* on a soil is expressed as a *site index*. Common trees are listed in the order of their observed general occurrence. Generally, only two or three tree species dominate.

The soils that are commonly used to produce timber have the yield predicted in cubic meters. The yield is predicted at the point where mean annual increment culminates.

The *site index* is determined by taking height measurements and determining the age of selected trees within stands of a given species. This index is the average height, in feet, that the trees attain in a specified number of years. This index applies to fully stocked, even-aged, unmanaged stands. Site index values given in table 7 are based on standard procedures and techniques *(5, 6, 7, 9, 10, 14)*.

The *productivity class* represents an expected volume produced by the most important trees, expressed in cubic meters per hectare per year. Cubic meters per hectare can be converted to cubic feet per acre by multiplying by 14.3. It can be converted to board feet by multiplying by a factor of about 71. For example, a productivity class of 8 means the soil can be expected to produce 114 cubic feet per acre per year at the point where mean annual increment culminates, or about 568 board feet per acre per year.

Trees to plant are those that are used for reforestation or, if suitable conditions exist, natural regeneration. They are suited to the soils and will produce a commercial wood crop. Desired product, topographic position (such as a low, wet area), and personal preference are three factors of many that can influence the choice of trees to use for reforestation.

Recreation

In table 8, the soils of the survey area are rated according to the limitations that affect their suitability for recreation. The ratings are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewerlines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation are also important. Soils subject to flooding are limited for recreational use by the duration and intensity of flooding and the season when flooding occurs. In planning recreation facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

In table 8, the degree of soil limitation is expressed as moderate or severe. *Moderate* means that limitations can be overcome or alleviated by planning, design, or special maintenance. *Severe* means that soil properties are unfavorable and that limitations can be offset only by costly soil reclamation, special design, intensive maintenance, limited use, or by a combination of these measures.

The information in table 8 can be supplemented by other information in this survey, for example, interpretations for septic tank absorption fields in table 11 and interpretations for dwellings without basements and for local roads and streets in table 10.

Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The best soils have gentle slopes and are not wet or subject to flooding during the period of use. The surface has few or no stones or boulders, absorbs rainfall readily but remains firm, and is not dusty when dry. Strong slopes and stones or boulders can greatly increase the cost of constructing campsites.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The best soils for picnic areas are firm when wet, are not dusty when dry, are not subject to flooding during the period of use, and do not have slopes, stones, or boulders that increase the cost of shaping sites or of building access roads and parking areas.

Playgrounds require soils that can withstand intensive foot traffic. The best soils are almost level and are not wet or subject to flooding during the season of use. The surface is free of stones and boulders, is firm after rains, and is not dusty when dry. If grading is needed, the depth of the soil over bedrock or a hardpan should be considered.

Paths and trails for hiking and horseback riding should require little or no cutting and filling. The best soils are not wet, are firm after rains, are not dusty when dry, and are not subject to flooding more than once a year during the period of use. They have moderate slopes and few or no stones or boulders on the surface.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. The best soils for use as golf fairways are firm when wet, are not dusty when dry, and are not subject to prolonged flooding during the period of use. They have moderate slopes and no stones or boulders on the surface. The suitability of the soil for tees or greens is not considered in rating the soils.

Wildlife Habitat

John F. Vance, biologist, Soil Conservation Service, helped prepare this section.

Good habitat for wildlife is available in most of Sumter County. The large woodland areas in the southern part of the county and the wetland areas along the Withlacoochee River provide particularly valuable habitat for wildlife. These areas include the 32,000 acre Withlacoochee State Forest, the 10,000 acre Richloam Wildlife Management Area, the 18,000 acre Southwest Florida Water Management District land, and the 10,000 acre Jumper Creek Swamp. Large areas of improved pasture are in the central and northern parts of the county, but the small wetlands and oak hammocks that are interspersed throughout most of these areas provide good habitat for wildlife.

The main game species in the county are deer, wild turkey, squirrels, wood duck, dove, and quail. Nongame species include raccoon, opossum, armadillo, gray fox, bobcat, otter, skunks, and a variety of songbirds, woodpeckers, wading birds, reptiles, and amphibians.

The Withlacoochee River, the large lakes, such as Lake Panasoffkee and Lake Okahumpha, and numerous small ponds, both natural and manmade, all provide good fishing. The primary species caught in these waters include largemouth bass, bluegills, redear sunfish, redbreast sunfish, black crappie, stumpknocker, catfish, and chain pickerel and also some bowfin, gar, and several species of minnow-size fish.

A number of endangered and threatened species are in Sumter County. They range from the seldom-seen red-cockaded woodpecker to more commonly apparent species, such as the Florida sandhill crane and the wood stork. A more detailed list of these species with information on range and habitat needs is available from the local office of the Soil Conservation Service.

Soils affect the kind and amount of vegetation that is available to wildlife as food and cover. They also affect the construction of water impoundments. The kind and abundance of wildlife depend largely on the amount and distribution of food, cover, and water. Wildlife habitat can be created or improved by planting appropriate vegetation, by maintaining the existing plant cover, or by promoting the natural establishment of desirable plants.

In table 9, the soils in the survey area are rated according to their potential for providing habitat for various kinds of wildlife. This information can be used in planning parks, wildlife refuges, nature study areas, and other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat.

The potential of the soil is rated good, fair, poor, or very poor. A rating of *good* indicates that the element or kind of habitat is easily established, improved, or maintained. Few or no limitations affect management, and satisfactory results can be expected. A rating of *fair* indicates that the element or kind of habitat can be established, improved, or maintained in most places. Moderately intensive management is required for satisfactory results. A rating of *poor* indicates that limitations are severe for the designated element or kind of habitat. Habitat can be created, improved, or maintained in most places, but management is difficult and must be intensive. A rating of *very poor* indicates that restrictions for the element or kind of habitat are very severe and that unsatisfactory results can be expected. Creating, improving, or maintaining habitat is impractical or impossible.

The elements of wildlife habitat are described in the following paragraphs.

Grain and seed crops are domestic grains and seed-producing herbaceous plants. Soil properties and features that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, surface stoniness, and flood hazard. Soil temperature and soil moisture are also considerations. Examples of grain and seed crops are corn, soybeans, wheat, browntop millet, and grain sorghum.

Grasses and legumes are domestic perennial grasses and herbaceous legumes. Soil properties and features that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, flood hazard, and slope. Soil temperature and soil moisture are also considerations. Examples of grasses and legumes are bahiagrass, lovegrass, Florida beggarweed, clover, and sesbania.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds. Soil properties and features that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, and flood hazard. Soil temperature and soil moisture are also considerations. Examples of wild herbaceous plants are bluestem, goldenrod, beggarweed, partridge pea, and bristlegrasses.

Hardwood trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage. Soil properties and features that affect the growth of hardwood trees and shrubs are depth of the root zone, the available water capacity, and wetness. Examples of these plants are oak, saw palmetto, cherry, sweetgum, wild grape, hawthorn, dogwood, hickory, blackberry, and blueberry. Examples of fruit-producing shrubs that are suitable for planting on soils rated *good* are firethorn, wild plum, and American beautyberry.

Coniferous plants furnish browse and seeds. Soil properties and features that affect the growth of coniferous trees, shrubs, and ground cover are depth of the root zone, available water capacity, and wetness. Examples of coniferous plants are pine, spruce, fir, cedar, and juniper.

Wetland plants are annual and perennial, wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Soil properties and features affecting wetland plants are texture of the surface layer, wetness, reaction, slope, and surface stoniness. Examples of wetland plants are smartweed, wild millet, wildrice, pickerelweed, maidencane, rushes, sedges, and reeds.

Shallow water areas have an average depth of less than 5 feet. Some are naturally wet areas. Others are created by dams, levees, or other water-control structures. Soil properties and features affecting shallow water areas are wetness, surface stoniness, slope, and permeability. Examples of shallow water areas are marshes, waterfowl feeding areas, and ponds.

The habitat for various kinds of wildlife is described in the following paragraphs.

Habitat for openland wildlife consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. The wildlife attracted to these areas include bobwhite quail, dove, meadowlark, field sparrow, cottontail, and red fox.

Habitat for woodland wildlife consists of areas of deciduous plants or coniferous plants or both and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas include wild turkey, woodcock, thrushes, woodpeckers, squirrels, gray fox, raccoon, deer, and bear.

Habitat for wetland wildlife consists of open, marshy, or swampy shallow water areas. Some of the wildlife attracted to such areas are ducks, egrets, herons, shore birds, otters, and alligators.

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. The ratings are given in the following tables: Building site development, Sanitary facilities, Construction materials, and Water management. The ratings are based on observed performance of the soils and on the estimated data and test data in the "Soil Properties" section.

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil within a depth of 5 or 6 feet, and because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations must be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about grain-size distribution, liquid limit, plasticity index, soil reaction, soil wetness, depth to a seasonal high water table, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kind of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to: evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthfill, and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

Building Site Development

Table 10 shows the degree and kind of soil limitations that affect shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are moderately favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, soil reclamation, or possibly increased maintenance is required. Special feasibility studies may be required where the soil limitations are severe.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for basements, graves, utility lines, open ditches, and other purposes. The ratings are based on soil properties, site features, and observed performance of the soils. The ease of digging, filling, and compacting is affected by the stone content, soil texture, and slope. The time of the year that excavations can be made is affected by the depth to a seasonal high water table and the susceptibility of the soil to flooding. The resistance of the excavation walls or banks to sloughing or caving is affected by soil texture and the depth to the water table.

Dwellings and small commercial buildings are structures built on shallow foundations on undisturbed soil. The load limit is the same as that for single-family dwellings no higher than three stories. Ratings are made for small commercial buildings without basements, for dwellings with basements, and for dwellings without basements. The ratings are based on soil properties, site features, and observed performance of the soils. A high water table, flooding, shrink-swell potential, and organic layers can cause the movement of footings. A high water table, large stones, and flooding affect the ease of excavation and construction. Landscaping and grading that require cuts and fills of more than 5 to 6 feet are not considered.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material, a base of gravel, crushed rock, or stabilized soil material, and a flexible or rigid surface. Cuts and fills are generally limited to less than 6 feet. The ratings are based on soil properties, site features, and observed performance of the soils. A high water table, flooding, large stones, and slope affect the ease of excavating and grading. Soil strength (as inferred from the engineering classification of the soil), shrink-swell potential, and depth to a high water table affect the traffic-supporting capacity.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. The ratings are based on soil properties, site features, and observed performance of the soils. Soil reaction, depth to a high water table, and the available water capacity in the upper 40 inches affect plant growth. Flooding, wetness, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer affect trafficability after vegetation is established.

Controlling Erosion on Building Sites

Soil erosion is a problem on disturbed areas. Water erosion can damage these soils if rains are intense and the soils are bare of vegetation and surface mulch.

The disturbing or clearing of areas for construction operations or for landscaping removes vegetation and leaves the soil vulnerable to erosion. Wind and water erosion can be reduced by clearing or disturbing only the minimum area necessary for construction.

Exposed soil results in soil blowing and sedimentation of streams. Control of erosion minimizes the pollution of streams by sediment and improves the quality of water for municipal use, for recreation, and for fish and wildlife.

Grading removes topsoil and may expose the sandy clay loam or sandy clay subsoil in Ft. Green, Mabel, Paisley, Sumterville, Tarrytown, and Vero soils. Ripping the exposed subsoil and covering it with less erodible topsoil reduce erosion.

Soil blowing is a major hazard on sandy soil. Wind erosion can damage soils in a few hours in open, unprotected areas if the winds are strong and the soil is dry and bare of vegetation and surface mulch. Blowing soil can affect drainage ditches, roads, fences, and equipment. The air pollution caused by blowing soil can create health problems.

Wind erosion can be minimized by maintaining vegetative cover and surface mulch and by planting windbreaks of trees and shrubs.

Mulching helps to reduce damage from water runoff and soil blowing and improves moisture conditions for seedlings.

Information about conservation practices to control erosion is available in local offices of the Soil Conservation Service.

Sanitary Facilities

Table 11 shows the degree and the kind of soil limitations that affect septic tank absorption fields, sewage lagoons, and sanitary landfills. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance may be needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, soil reclamation, or possibly increased maintenance are required.

Table 11 also shows the suitability of the soils for use as daily cover for landfills. A rating of *good* indicates that soil properties and site features are favorable for the use and that good performance and low maintenance can be expected; *fair* indicates that soil properties and site features are moderately favorable for the use and one or more soil properties or site features make the soil less desirable than the soils rated good; and *poor* indicates that one or more soil properties or site features are unfavorable for the use and overcoming the unfavorable properties requires special design, extra maintenance, or costly alteration.

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 72 inches is evaluated. The ratings are based on soil properties, site features, and observed performance of the soils. Permeability, a high water table, and flooding affect absorption of the effluent. Large stones interfere with installation.

Unsatisfactory performance of septic tank absorption fields, including excessively slow absorption of effluent, surfacing of effluent, and hillside seepage, can affect public health. Ground water can be polluted if highly permeable sand and gravel is less than 4 feet below the base of the absorption field, if slope is excessive, or if the high water table is near the surface. There must be unsaturated soil material beneath the absorption field to filter the effluent effectively. Many local ordinances require that this material be of a certain thickness.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Lagoons generally are designed to hold the sewage within a depth of 2 to 5 feet. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water.

Table 11 gives ratings for the natural soil that makes up the lagoon floor. The surface layer and, generally, 1 foot or 2 feet of soil material below the surface layer are excavated to provide material for the embankments. The ratings are based on soil properties, site features, and observed performance of the soils. Considered in the ratings are slope, permeability, a high water table, flooding, large stones, and content of organic matter.

Excessive seepage due to rapid permeability of the soil or a high water table that is high enough to raise the level of sewage in the lagoon causes a lagoon to function unsatisfactorily. Pollution results if seepage is excessive or if floodwater overtops the lagoon. A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope can cause construction problems, and large stones can hinder compaction of the lagoon floor.

Sanitary landfills are areas where solid waste is disposed of by burying it in soil. There are two types of landfill—trench and area. In a trench landfill, the waste is placed in a trench. It is spread, compacted, and covered daily with a thin layer of soil excavated at the site. In an area landfill, the waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site.

Both types of landfill must be able to bear heavy vehicular traffic. Both types involve a risk of ground water pollution. Ease of excavation and revegetation needs to be considered.

The ratings in table 11 are based on soil properties, site features, and observed performance of the soils. Permeability, a high water table, slope, and flooding affect both types of landfill. Texture, stones and boulders, highly organic layers, and soil reaction affect trench type landfills. Unless otherwise stated, the ratings apply only to that part of the soil within 6 feet of the surface. For deeper trenches, a limitation rated slight or moderate may not be valid. Onsite investigation is needed.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area type sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste.

Soil texture, wetness, coarse fragments, and slope affect the ease of removing and spreading the material during wet and dry periods. Loamy or silty soils that are free of large stones or excess gravel are the best cover for a landfill. Clayey soils are sticky or cloddy and are difficult to spread; sandy soils are subject to soil blowing.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over the water table to permit revegetation. The soil material used as final cover for a landfill should be suitable for plants. The surface layer generally has the best workability, more organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

Construction Materials

Table 12 gives information about the soils as a source of roadfill, sand, gravel, and topsoil. The soils are rated *good, fair,* or *poor* as a source of roadfill and topsoil. They are rated as a probable or improbable source of sand and gravel. The ratings are based on soil properties and site features that affect the removal of the soil and its use as construction material. Normal compaction, minor processing, and other standard construction practices are assumed. Each soil is evaluated to a depth of 5 or 6 feet.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the soil material below the surface layer to a depth of 5 or 6 feet. It is assumed that soil layers will be mixed during excavating and spreading. Many soils have layers of contrasting suitability within their profile. The table showing engineering index properties provides detailed information about each soil layer. This information can help determine the suitability of each layer for use as roadfill. The performance of soil after it is stabilized with lime or cement is not considered in the ratings.

The ratings are based on soil properties, site features, and observed performance of the soils. The thickness of suitable material is a major consideration. The ease of excavation is affected by large stones, a high water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the engineering classification of the soil) and shrink-swell potential.

Soils rated *good* contain significant amounts of sand or gravel or both. They have at least 5 feet of suitable material, low shrink-swell potential, few cobbles and stones, and slopes of 15 percent or less. Depth to the water table is more than 3 feet. Soils rated *fair* are more than 35 percent silt- and clay-sized particles and have a plasticity index of less than 10. They have moderate shrink-swell potential, slopes of 15 to 25 percent, or many stones. Depth to the high water table is 1 foot to 3 feet. Soils rated *poor* have a plasticity index of more than 10, a high shrink-swell potential, many stones, or slopes of more than 25 percent. They are wet, and the depth to the high water table is less than 1 foot. They may have layers of suitable material, but the material is less than 3 feet thick.

Sand and gravel are natural aggregates suitable for commercial use with a minimum of processing. Sand and gravel are used in many kinds of construction. Specifications for each use vary widely. In table 12, only the probability of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material.

The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the engineering classification of the soil), the thickness of suitable material, and the content of rock fragments. Kinds of rock and stratification are given in the soil series descriptions. Gradation of grain sizes is given in the table on engineering index properties.

A soil rated as a probable source has a layer of clean sand or gravel or a layer of sand or gravel that is up to 12 percent silty fines. This material must be at least 3 feet thick and less than 50 percent, by weight, large stones. All other soils are rated as an improbable source. Coarse fragments of soft bedrock, such as shale and siltstone, are not considered to be sand and gravel.

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area.

Plant growth is affected by toxic material and by such properties as soil reaction, available water capacity, and fertility. The ease of excavating, loading, and spreading is affected by rock fragments, slope, a high water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, a high water table, rock fragments, and toxic material.

Soils rated *good* have friable, loamy material to a depth of at least 40 inches. They are free of stones and cobbles, have little or no gravel, and have slopes of less than 8 percent. They are low in content of soluble salts, are naturally fertile or respond well to fertilizer, and are not so wet that excavation is difficult.

Soils rated *fair* are sandy soils, loamy soils that have a relatively high content of clay, soils that have only 20 to 40 inches of suitable material, soils that have an appreciable amount of gravel, stones, or soils that have slopes of 8 to 15 percent. The soils are not so wet that excavation is difficult.

Soils rated *poor* are very sandy or clayey, have less than 20 inches of suitable material, have a large amount of gravel or stones, have slopes of more than 15 percent, or have a seasonal high water table at or near the surface.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and releases a variety of plant-available nutrients as it decomposes.

Water Management

Table 13 gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; and aquifer-fed ponds. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and are easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increase in construction costs, and possibly increased maintenance are required.

This table also gives the restrictive features that affect each soil for drainage, irrigation, terraces and diversions, and grassed waterways.

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, or organic matter. A high water table affects the amount of usable material. It also affects trafficability.

Aquifer-fed excavated ponds are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table and permeability of the aquifer. The content of large stones affect the ease of excavation.

Drainage is the removal of excess surface and subsurface water from the soil. How easily and effectively the soil is drained depends on the permeability; depth to a high water table or depth of standing water if the soil is subject to ponding; slope; susceptibility to flooding; and subsidence of organic layers. Excavating and grading and the stability of ditchbanks are affected by large stones, slope, and the hazard of cutbanks caving. Availability of drainage outlets is not considered in the ratings.

Irrigation is the controlled application of water to supplement rainfall and support plant growth. The design and management of an irrigation system are affected by depth to the water table, the need for drainage, flooding, available water capacity, intake rate, permeability, erosion hazard, and slope. The construction of a system is affected by large stones. The performance of a system is affected by the depth of the root zone and soil reaction.

Terraces and diversions are embankments or a combination of channels and ridges constructed across a slope to reduce erosion and conserve moisture by intercepting runoff. Slope, wetness, and large stones affect the construction of terraces and diversions. A restricted rooting depth, a severe hazard of wind or water erosion, an excessively coarse texture, and restricted permeability adversely affect maintenance.

Grassed waterways are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Large stones, wetness, and slope affect the construction of grassed waterways. A hazard of wind erosion, low available water capacity, restricted rooting depth, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey. The data and the estimates of soil and water features, listed in tables, are explained on the following pages.

Soil properties are determined by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine grain-size distribution, plasticity, and compaction characteristics. These results are reported in table 20.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help characterize key soils.

The estimates of soil properties shown in the tables include the range of grain-size distribution and Atterberg limits, the engineering classifications, and the physical and chemical properties of the major layers of each soil. Pertinent soil and water features also are given.

Engineering Index Properties

Table 14 gives estimates of the engineering classification and of the range of index properties for the major layers of each soil in the survey area. Most soils have layers of contrasting properties within the upper 5 or 6 feet.

Depth to the upper and lower boundaries of each layer is indicated. The range in depth and information on other properties of each layer are given for each soil series under Soil Series and Their Morphology."

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is as much as 15 percent, an appropriate modifier is added, for example, gravelly." Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system *(2)* and the system adopted by the American Association of State Highway and Transportation Officials *(1)*.

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to grain-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, SP-SM.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of grain-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20, or higher, for the poorest. The AASHTO classification for soils tested, with group index numbers in parentheses, is given in table 20.

Rock fragments larger than 3 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area, or from nearby areas, and on field examination.

The estimates of grain-size distribution, liquid limit, and plasticity index are rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is omitted in the table.

Physical and Chemical Properties

Table 15 shows estimates of some characteristics and features that affect soil behavior. These estimates are given for the major layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Clay as a soil separate, or component, consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each major soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The amount and kind of clay greatly affect the fertility and physical condition of the soil. They influence the soil's adsorption of cations, moisture retention, shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at 1/3 bar moisture tension. Weight is determined after drying the soil at 105 degrees C. In this table, the estimated moist bulk density of each major soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. A bulk density of more than 1.6 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability refers to the ability of a soil to transmit water or air. The estimates indicate the rate of movement of water through the soil when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems, septic tank absorption fields, and construction where the rate of water movement under saturated conditions affects behavior.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage in each major soil layer is stated in inches of water per inch of soil. The capacity varies, depending on soil properties that affect the retention of water and the depth of the root zone. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Soil reaction is a measure of acidity or alkalinity and is expressed as a range in pH values. The range in pH of each major horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Shrink-swell potential is the potential for volume change in a soil with a loss or gain in moisture. Volume change occurs mainly because of the interaction of clay minerals with water and varies with the amount and type of clay minerals in the soil. The size of the load on the soil and the magnitude of the change in soil moisture content influence the amount of swelling of soils in place. Laboratory measurements of swelling of undisturbed clods were made for many soils. For others, swelling was estimated on the basis of the kind and amount of clay minerals in the soil and on measurements of similar soils.

If the shrink-swell potential is rated moderate to very high, shrinking and swelling can cause damage to buildings, roads, and other structures. Special design is often needed.

Shrink-swell potential classes are based on the change in length of an unconfined clod as moisture content is increased from air-dry to field capacity. The change is based on the soil fraction less than 2 millimeters in diameter. The classes are *low*, a change of less than 3 percent; *moderate*, 3 to 6 percent; and *high*, more than 6 percent. *Very high*, greater than 9 percent, is sometimes used.

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) to predict the average annual rate of soil loss by sheet and rill erosion. Losses are expressed in tons per acre per year. These estimates are based primarily on percentage of silt, sand, and organic matter (up to 4 percent) and on soil structure and permeability. Values of K range from 0.02 to 0.69. The higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur over a sustained period without affecting crop productivity. The rate is expressed in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their resistance to wind erosion in cultivated areas. The groups indicate the susceptibility of soil to wind erosion and the amount of soil lost. Soils are grouped according to the following distinctions:

1. Sands, coarse sands, fine sands, and very fine sands. These soils are generally not suitable for crops. They are extremely erodible, and vegetation is difficult to establish.

2. Loamy sands, loamy fine sands, and loamy very fine sands. These soils are very highly erodible. Crops can be grown if intensive measures to control wind erosion are used.

3. Sandy loams, coarse sandy loams, fine sandy loams, and very fine sandy loams. These soils are highly erodible. Crops can be grown if intensive measures to control wind erosion are used.

4L. Calcareous loamy soils that are less than 35 percent clay and more than 5 percent finely divided calcium carbonate. These soils are erodible. Crops can be grown if intensive measures to control wind erosion are used.

4. Clays, silty clays, clay loams, and silty clay loams that are more than 35 percent clay. These soils are moderately erodible. Crops can be grown if measures to control wind erosion are used.

5. Loamy soils that are less than 18 percent clay and less than 5 percent finely divided calcium carbonate and sandy clay loams and sandy clays that are less than 5 percent finely divided calcium carbonate. These soils are slightly erodible. Crops can be grown if measures to control wind erosion are used.

6. Loamy soils that are 18 to 35 percent clay and less than 5 percent finely divided calcium carbonate, except silty clay loams. These soils are very slightly erodible. Crops can easily be grown.

7. Silty clay loams that are less than 35 percent clay and less than 5 percent finely divided calcium carbonate. These soils are very slightly erodible. Crops can easily be grown.

8. Stony or gravelly soils and other soils not subject to wind erosion.

Organic matter is the plant and animal residue in the soil at various stages of decomposition.

In table 15, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter of a soil can be maintained or increased by returning crop residue to the soil. Organic matter affects the available water capacity, infiltration rate, and tilth. It is a source of nitrogen and other nutrients for crops.

Soil and Water Features

Table 16 gives estimates of various soil and water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are used to estimate runoff from precipitation. Soils are assigned to one of four groups. They are grouped according to the intake of water when the soils are thoroughly wet and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have high shrink-swell potential, soils that have a permanent high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Dual hydrologic groups are given for wet soils rated D in their natural condition that can be adequately drained. It is considered that drainage is feasible and practical and that drainage improves the hydrologic group by at least two classes (from D to A or B). The first letter applies to the drained condition.

Flooding, the temporary covering of the soil surface by flowing water, is caused by overflowing streams, by runoff from adjacent slopes, or by inflow from high tides. Shallow water standing or flowing for short periods after rainfall or snowmelt is not considered flooding. Standing water in swamps and marshes or in a closed depression is considered ponding.

Table 16 gives the frequency and duration of flooding and the time of year when flooding is most likely to occur.

Frequency, duration, and probable dates of occurrence are estimated. Frequency generally is expressed as *none, rare,* or *frequent. None* means that flooding is not probable. *Rare* means that flooding is unlikely but possible under unusual weather conditions (there is a near 0 to 5 percent chance of flooding in any year). *Frequent* means that flooding occurs often under normal weather conditions (there is more than a 50 percent chance of flooding in any year). *Common* is used when classification as occasional or frequent does not affect interpretations. Duration is expressed as *brief* (2 to 7 days), *long* (7 days to 1 month), and *very long* (more than 1 month). The time of year that floods are most likely to occur is expressed in months. November-May, for example, means that flooding can occur during the period November through May. About two-thirds to three-fourths of all flooding occurs during the stated period.

The information on flooding is based on evidence in the soil profile, namely, thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and absence of distinctive horizons, which are characteristic of soils that are not subject to flooding.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

High water table (seasonal) is the highest level of a saturated zone in the soil in most years. The depth to a seasonal high water table applies to undrained soils. The estimates are based mainly on the evidence of a saturated zone, namely grayish colors or mottles in the soil. Indicated in table 16 are the depth to the seasonal high water table; the kind of water table, that is, *perched* or *apparent;* and the months of the year that the water table commonly is highest. A water table that is seasonally high for less than 1 month is not indicated in table 16.

An *apparent* water table is a thick zone of free water in the soil. It is indicated by the level at which water stands in an uncased borehole after adequate time is allowed for adjustment in the surrounding soil. A *perched* water table is water standing above an unsaturated zone. In places an upper, or perched, water table is separated from a lower one by a dry zone.

The two numbers in the High water table-Depth" column indicate the normal range in depth to a saturated zone. Depth is given to the nearest half foot. The first numeral in the range indicates the highest water level. A plus sign preceding the range in depth indicates that the water table is above the surface of the soil. More than 6.0" indicates that the water table is below a depth of 6 feet or that the water table exists for less than a month.

Subsidence is the settlement of organic soils or of saturated mineral soils of very low density. Subsidence results from either desiccation and shrinkage or oxidation of organic material, or both, following drainage. Subsidence takes place gradually, usually over a period of several years. Table 16 shows the expected initial subsidence, which usually is a result of drainage, and total subsidence, which results from a combination of factors.

Not shown in the table is subsidence caused by an imposed surface load or by the withdrawal of ground water throughout an extensive area as a result of lowering the water table.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that dissolves or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors creates a severely corrosive environment. The steel in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than steel in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low, moderate*, or *high*, is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion is also expressed as *low*, *moderate*, or *high*. It is based on soil texture, acidity, and the amount of sulfates in the saturation extract.

Physical, Chemical, and Mineralogical Analyses of Selected Soils

Dr. Victor W. Carlisle and Dr. Mary E. Collins, professor and assistant professor, respectively, University of Florida, Soil Science Department, prepared this section.

Parameters for physical, chemical, and mineralogical properties of representative pedons sampled in Sumter County are presented in tables 17, 18, and 19. The analyses were conducted and coordinated by the Soil Characterization Laboratory at the University of Florida. Detailed profile descriptions of soils analyzed are given in the section Soil Series and Their Morphology." Laboratory data and profile information for other soils in Sumter County, as well as for other counties in Florida, are on file at the University of Florida, Soil Science Department.

Typifying pedons were sampled from pits at carefully selected locations. Samples were air-dried, crushed, and sieved through a 2-millimeter screen. Most analytical methods used are outlined in Soil Survey Investigations Report No. 1 *(13)*.

Particle-size distribution was determined using a modified pipette method with sodium hexametaphosphate dispersion. Hydraulic conductivity and bulk density were determined on undisturbed soil cores. Water retention parameters were obtained from duplicate undisturbed soil cores placed in tempe pressure cells. Weight percentages of water retained at 100 centimeters water (1/10 bar) and 345 centimeters water (1/3 bar) were calculated from volumetric water percentages divided by bulk density. Samples were ovendried and ground to pass a 2 millimeter sieve, and the 15-bar water retention was determined. Organic carbon was determined by a modification of the Walkley-Black wet combustion method.

Extractable bases were obtained by leaching soils with normal ammonium acetate buffered at pH 7.0. Sodium and potassium in the extract were determined by flame emission. Calcium and magnesium extractable was determined by atomic absorption spectrophotometry. Extractable acidity was determined by the barium chloride-triethanolamine method at pH 8.2. Cation-exchange capacity was calculated by summation of extractable bases and extractable acidity. Base saturation is the ratio of extractable bases to cation-exchange capacity expressed in percent. The pH measurements were made with a glass electrode using a soil-water ratio of 1:1; a 0.01 molar calcium chloride solution in a 1:2 soil-solution ratio; and 1 normal potassium chloride solution in a 1:1 soil-solution ratio.

Electrical conductivity determinations were made with a conductivity bridge on 1:1 soil to water mixtures. Iron and aluminum extractable in sodium dithionite-citrate were determined by atomic absorption spectrophotometry. Aluminum, carbon, and iron were extracted from a probable spodic horizon with 0.1 molar sodium pyrophosphate. The determination of aluminum and iron was by atomic absorption and extracted carbon by the Walkley-Black wet combustion method.

Mineralogy of the clay fraction less than 2 microns was ascertained by X-ray diffraction. Peak heights at 18, 14, 7.2, 4.31, and 3.04 angstrom positions represent montmorillonite, interstratified expandable vermiculite, or 14-angstrom intergrades, kaolinite, quartz, and calcite respectively. Peaks were measured, summed, and normalized to give the percent of the soil minerals identified in the X-ray diffractograms. These percentage values do not indicate absolute determined quantities of soil minerals but do imply a relative distribution of minerals in a particular mineral suite. Absolute percentages would require additional knowledge of particle size, crystallinity, unit structure substitution, and matrix problems.

The inherently sandy nature of most of the soils in Sumter County (table 17) is apparent. All soils sampled had one horizon or more in which the content of sand exceeded 90 percent. Adamsville, Candler, Florahome, Lake, and Myakka soils were more than 90 percent sand to a depth of 2 meters or more. Two horizons in the Oldsmar soil contained less than 90 percent sand.

Deep horizons in the Arredondo, Ft. Green, Mabel, Millhopper, Oldsmar, Sparr, and Sumterville soils contained the largest amount of clay that ranged from 25.7 to 49.8 percent. Tarrytown sandy clay loam contained relatively large amounts of clay throughout except in the C horizon.

Silt content was generally less than 4 percent in most of the soils in the county; however, silt content in excess of 10 percent was in one horizon or more of the Mabel, Millhopper, Sparr, and Tarrytown soils and was 3 percent or less throughout the Adamsville, Candler, and Lake soils.

Fine sand dominated the sand fractions in the Adamsville, Arredondo, Ft. Green, Lake, Mabel, Millhopper, Myakka, Oldsmar, Sparr, Sumterville, and Tarrytown soils. Horizons that had more than 50 percent fine sand occurred in all of these soils except in the Tarrytown series. Medium sand dominated the sand fractions in the Candler and Florahome soils; however, the content of medium sand was generally less than 50 percent. The content of very coarse and coarse sand was generally less than 0.2 percent in Candler soil and 5 percent in Florahome soil. The content of very fine sand generally ranged from 4 to 10 percent; however, most horizons in the Millhopper and Sparr soils slightly exceeded these values. Droughtiness is a common characteristic of a sandy soil, particularly a soil that is moderately well drained, well drained, or excessively drained.

Low hydraulic conductivity values of less than 12 centimeters per hour were recorded throughout the Mabel and Tarrytown soils and in the deep horizons of Arredondo, Ft. Green, Millhopper, Myakka, Oldsmar, Sparr, and Sumterville soils. Horizons that had hydraulic conductivity values of more than 60 centimeters per hour occurred in the Candler, Florahome, and Lake soils. Horizons in the Ft. Green, Mabel, Millhopper, Oldsmar, Sparr, Sumterville, and Tarrytown soils that had a relatively high content of clay resulted in hydraulic conductivity values that were less than 1 centimeter per hour. Design and function of septic tank absorption fields are affected by such low hydraulic conductivity values. Oldsmar soil contained a well-developed spodic horizon that had low hydraulic conductivity values. The spodic horizon in the Myakka soil had higher hydraulic conductivity values than are generally recorded for the spodic horizon in most Florida soils. The available water capacity for plants can be estimated from bulk density and water content data. Soils that had an excessive content of sand and a low content of organic matter, such as Candler sand, have very low available water capacity for plants. Conversely, the available water capacity for plants is high in soils that have a high amount of fine textured material and a high content of organic matter, such as in the Tarrytown sandy clay loam soil.

The chemical soil properties as presented in table 18 show that a low amount of extractable bases is present in most of the soils in Sumter County. All horizons of Adamsville, Candler, Florahome, Lake, Millhopper, and Sparr soils contained less than 2 milliequivalents per hundred grams extractable bases. Only Ft. Green, Mabel, Myakka, Oldsmar, Sumterville, and Tarrytown soils contained more than 5 milliequivalents per hundred grams extractable bases. The mild, humid climate in Sumter County results in depletion of basic soil cations (calcium, magnesium, sodium, and potassium) through leaching.

Calcium was the dominant base in the soils in Sumter County; however, the deep horizons of Millhopper and Sparr soils contained more magnesium than calcium. All other soils had at least one horizon that had more than 1 milliequivalent per hundred grams extractable calcium except the Candler, Lake, and Sparr series. Extractable magnesium in excess of 1 milliequivalent per hundred grams occurred only in one or two horizons of the Arredondo, Millhopper, Sparr, and Sumterville soils, but a lower content of magnesium was detectable throughout all other soils. Sodium generally occurred in amounts of less than 0.1 milliequivalents per hundred grams; however, one horizon or more in the Mabel, Millhopper, Myakka, Oldsmar, Sparr, Sumterville, and Tarrytown soils slightly exceeded this. Candler and Ft. Green soils contained one or two horizons that contained nondetectable amounts of sodium. Most of the soils in Sumter County contained less than 0.1 milliequivalents per hundred grams potassium except a few horizons of the Arredondo, Mabel, Myakka, Sumterville, and Tarrytown soils that exceeded this amount. Adamsville, Candler, Florahome, Ft. Green, Immokalee, Lake, Mabel, Millhopper, Myakka, Oldsmar, Sparr, and Sumterville soils contained one horizon or more that had 0.01 milliequivalents per hundred grams extractable potassium.

Values for exchange capacity, an indication of plant nutrient capacity, exceeded 10 milliequivalents per hundred grams in the surface horizon of Ft. Green, Myakka, Oldsmar, and Tarrytown soils. Cation-exchange capacity exceeded 10 milliequivalents per hundred grams in at least one horizon below the surface in the Arredondo, Ft. Green, Mabel, Myakka, Oldsmar, Sumterville, and Tarrytown soils. These higher cation-exchange capacity values occurred in the spodic horizon of Myakka and Oldsmar soil. Soils that had low cation-exchange capacities in the surface layer, such as Adamsville and Candler soils, require only small amounts of lime to significantly alter the base status and soil reaction. Generally, soils of low inherent soil fertility are associated with low values for extractable bases and low cation-exchange capacities, and fertile soils are associated with high values for extractable bases, high base saturation values, and high cation-exchange capacities.

Organic carbon content was less than 1 percent throughout the Adamsville, Arredondo, Candler, Florahome, Sparr, and Sumterville soils. Only the surface layer of Ft. Green, Lake, Mabel, Millhopper, Myakka, and Tarrytown soils contained organic carbon in excess of 1 percent. Also, the content of organic carbon in the spodic horizon of Myakka and Oldsmar soils ranged from 1.31 to 3.22 percent. In all other soils, the content of organic carbon decreased rapidly as soil depth increased. Since the content of organic carbon in a surface layer is directly related to soil nutrient and water retention capacity of sandy soils, conservation practices that conserve and maintain the content of organic carbon are desirable.

Electrical conductivity values were all very low, ranging from nondetectable amounts in many horizons to a high of 0.04 millimhos per centimeter in the surface layer of the Millhopper series. These data indicate that soluble salt content of soils sampled in Sumter County were insufficient to detrimentally affect the growth of salt-sensitive plants.

Soil reaction in water generally ranged between pH 5.0 and 6.0. Slightly lower values were recorded for the Myakka and Oldsmar soils and for the deep horizons of the Florahome soil. Slightly higher reaction values were recorded throughout the Ft. Green and Tarrytown series and for some horizons in the Arredondo and Mabel soils. With few exceptions, soil reaction was 0.5 to 1.5 pH units lower in calcium chloride than in water. Maximum plant nutrient availability is generally attained when soil reaction is between pH 6.5 and 7.5; however, under Florida conditions, maintaining soil reaction above pH 6.5 is not economically feasible for most agricultural production purposes.

The ratio of pyrophosphate extractable carbon and aluminum to clay in the Bh horizon of the Myakka and Oldsmar soils was sufficient to meet chemical criteria established for the spodic horizon. Sodium pyrophosphate extractable iron was 0.03 percent or less in the spodic horizon of Myakka and Oldsmar soils.

Citrate-dithionite extractable iron in the argillic horizon of Ultisols ranged from 0.01 percent in the Mabel soil to 0.98 percent in the Millhopper soil. Similarly, these values in the Bh horizon of Spodosols were 0.01 percent in the Myakka soil.

Aluminum extracted by citrate-dithionite from the Bt horizon ranged from 0.02 percent in the Tarrytown soil to 0.19 percent in the Arredondo soil. Amounts of iron and aluminum in the soils in Sumter County are not sufficient to detrimentally affect phosphorus availability.

Sand fractions of 2 to 0.05 millimeters were siliceous with quartz overwhelmingly dominant in all soils. Small amounts of heavy minerals occurred in most horizons with the greatest concentration in the very fine sand fraction. No weatherable minerals were observed. Crystalline mineral components of the clay fraction of less than 0.002 millimeters are reported in table 19 for major horizons of the soils sampled. The clay mineralogical suite was composed of montmorillonite, a 14-angstrom intergrade, kaolinite, quartz, and calcite.

Montmorillonite occurred in all soils sampled except in the Florahome, Lake, and Oldsmar soils. No detectable amounts of montmorillonite were present throughout the Adamsville, Arredondo, and Sumterville soils. Although kaolinite dominated the clay fraction of most soils sampled, montmorillonite was dominant in the Ft. Green and Tarrytown soils. Large amounts of montmorillonite also occurred in the deep horizons of the Mabel and Sumterville soils. The 14-angstrom intergrade minerals occurred in all soils but dominated only the Lake soil. All soils contained varying amounts of quartz, but larger amounts occurred in the Myakka and Oldsmar soils. Small amounts of calcite were detected in the Candler, Millhopper, Sparr, and Sumterville soils.

Montmorillonite in Sumter County soils is probably the least stable mineral component in the present acidic environment. The large amounts of montmorillonite in the Ft. Green and Tarrytown soils are related to the high soil reaction associated with these soils. Considerable volume changes can result from shrinkage when dry and swelling when wet of the montmorillonitic subsoil of the Ft. Green soil and throughout the Tarrytown soil. The occurrence of relatively large amounts of 14-angstrom intergrades and the general tendency for these minerals to decrease as soil depth increases suggest that the 14-angstrom intergrade minerals are among the most stable species in this weathering environment. The general, although inconsistent, tendency for kaolinite to increase as soil depth increases indicates that this mineral species is less stable than the 14-angstrom intergrade in the severe weathering environment near the soil surface. Clay-sized quartz has primarily resulted from decrements of the silt fraction. The small amounts of calcite seem to occur at random in the soils in Sumter County. Soils dominated by montmorillonite and 14-angstrom intergrades have a much higher cation-exchange capacity and retain more plant nutrients than soils dominated by kaolinite or quartz. Clay mineralogy of the soils in Sumter County influences their use and management less frequently than does the total content of clay.

Engineering Index Test Data

Table 20 shows laboratory test data for several pedons sampled at carefully selected sites in the survey area. The pedons are typical of the series and are described in the section Soil Series and Their Morphology." The soil samples were tested by the Soils Laboratory, Florida Department of Transportation, Bureau of Materials and Research.

These tests were made to help evaluate the soils for engineering purposes. The classifications given are based on data obtained by mechanical analysis and by tests to determine liquid limits and plasticity indices. The mechanical analyses were made by combined sieve and hydrometer methods *(3)*. The various grain-size fractions were calculated on the basis of all the material in the soil sample, including that coarser than 2 millimeters. Mechanical analyses used in this method should not be used in naming the textural classes of soils.

The testing methods generally are those of the American Association of State Highway and Transportation Officials (AASHTO) or the American Society for Testing and Materials (ASTM).

The tests and methods are: AASHTO classification—M 145 (AASHTO), D 3282 (ASTM); Unified classification—D 2487 (ASTM); Mechanical analysis--T 88 (AASHTO), D 2217 (ASTM); Liquid limit—T 89 (AASHTO), D 423 (ASTM); Plasticity index—T 90 (AASHTO), D 424 (ASTM); Moisture density, Method A—T 99 (AASHTO), D 698 (ASTM).

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Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories *(12)*. Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or on laboratory measurements. Table 21 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Ten soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Entisol.

SUBORDER. Each order is divided into suborders, primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Aquent (*Aqu*, meaning water, plus *ent*, from Entisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Psammaquents (*Psamm*, meaning sandy texture, plus *aquent*, the suborder of the Entisols that has an aquic moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other known kind of soil. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Typic* identifies the subgroup that typifies the great group. An example is Typic Psammaquents.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Mostly the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineral content, temperature regime, depth of the root zone, consistence, moisture equivalent, slope, and permanent cracks. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is siliceous, hyperthermic Typic Psammaquents.

SERIES. The series consists of soils that have similar horizons in their profile. The horizons are similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile. There can be some variation in the texture of the surface layer or of the substratum within a series. An example is the Pompano series, which is a member of the siliceous, hyperthermic family of Typic Psammaquents.

Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. The descriptions are arranged in alphabetic order.

Characteristics of the soil and the material in which it formed are identified for each series. The soil is compared with similar soils and with nearby soils of other series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the *Soil Survey Manual (11)*. Many of the technical terms used in the descriptions are defined in *Soil Taxonomy (12)*. Unless otherwise stated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

The map units of each soil series are described in the section Detailed Soil Map Units."

Adamsville Series

The Adamsville series consists of nearly level, somewhat poorly drained, rapidly permeable soils on low, broad flats and low knolls. These soils formed in thick, sandy marine sediment. The slopes range from 0 to 2 percent. In most years, a high water table is at a depth of 20 to 40 inches for 2 to 6 months. These soils are hyperthermic, uncoated Aquic Quartzipsamments.

Adamsville soils are associated with Basinger, Immokalee, Myakka, Placid, Pompano, and Tavares soils. These soils are poorly drained except for Tavares soils, which are moderately well drained. In addition, Basinger soils have a Bh horizon and a C horizon within 40 inches of the surface. Immokalee and Myakka soils have a Bh horizon. Placid soils have an umbric epipedon. Tavares soils have a water table at a depth of more than 40 inches.

Typical pedon of Adamsville fine sand, bouldery subsurface, 0.6 mile west of U.S. Interstate Highway 75, 1.7 miles north of Sumter County Road 48, SE1/4NE1/4 sec. 6, T. 21 S., R. 22 E.

Ap—0 to 5 inches; gray (10YR 5/1) fine sand; weak fine granular structure; loose; many fine roots; medium acid; clear wavy boundary.

C1—5 to 9 inches; brown (10YR 5/3) fine sand; few fine faint brownish yellow mottles; single grained; loose; common fine roots; medium acid; gradual wavy boundary.

C2—9 to 17 inches; light yellowish brown (10YR 6/4) fine sand; few fine faint strong brown mottles; single grained; loose; common medium white splotches of uncoated sand grains; common fine roots; medium acid; gradual wavy boundary.

C3—17 to 29 inches; very pale brown (10YR 7/4) fine sand; few fine faint brownish yellow mottles; single grained; loose; common fine roots; medium acid; gradual wavy boundary.

C4—29 to 80 inches; white (10YR 8/1) fine sand; few fine faint yellow, brownish yellow, and strong brown mottles; single grained; loose; few fine roots; medium acid.

The sand or fine sand extends to a depth of 80 inches or more.

Reaction is strongly acid or medium acid in the A horizon. It is strongly acid to slightly acid in the C horizon.

The A horizon has hue of 10YR, value of 3 to 5, and chroma of 1 or 2.

The C horizon has hue of 10YR, value of 5 to 8, and chroma of 1 to 4. In some pedons, the C horizon is generally mottled in shades of gray, yellow, and brown. Texture is fine sand or sand.

Apopka Series

The Apopka series consists of nearly level to gently sloping, well drained, moderately permeable soils on the uplands. These soils formed in thick beds of sandy and loamy marine or eolian deposits. The slopes range from 0 to 5 percent. A seasonal high water table is at a depth of 72 inches or more. These soils are loamy, siliceous, hyperthermic Grossarenic Paleudults.

Apopka soils are associated with Arredondo, Astatula, Candler, Kendrick, Millhopper, and Tavares soils. Kendrick soils have an argillic horizon that is between depths of 20 and 40 inches. Arredondo soils are rapidly permeable. Astatula and Candler soils are excessively drained. In addition, Astatula soils are sandy throughout, and Candler soils have lamellae between depths of 50 and 80 inches. Millhopper and Tavares soils are moderately well drained. In addition, Tavares soils are sandy throughout.

Typical pedon of Apopka fine sand, 0 to 5 percent slopes; 100 feet north of Sumter County Road 466A, 0.5 mile west of the Sumter-Lake County line, SE1/4NE1/4 sec. 1, T. 19 S., R. 23 E.

Ap—0 to 8 inches; dark gray (10YR 4/1) fine sand; weak fine granular structure; loose; many fine and few medium roots; very strongly acid; clear wavy boundary.

E1—8 to 40 inches; pale brown (10YR 6/3) fine sand; single grained; loose; common fine roots; common charcoal fragments; very strongly acid; gradual wavy boundary.

E2—40 to 54 inches; very pale brown (10YR 7/4) fine sand; single grained; loose; common fine roots; common charcoal fragments; common white (10YR 8/1) sand stripping; strongly acid; abrupt wavy boundary.

Bt1—54 to 63 inches; brownish yellow (10YR 6/6) sandy loam; weak medium subangular blocky structure; friable; thin patches of clay films on faces of peds; very strongly acid; gradual wavy boundary.

Bt2—63 to 80 inches; reddish yellow (7.5YR 6/8) sandy loam; weak medium subangular blocky structure; friable; very strongly acid.

The solum is 80 inches or more thick. Reaction ranges from very strongly acid to medium acid throughout.

The Ap or A horizon has hue of 10YR, value of 3 to 5, and chroma of 1 or 2.

The E horizon has hue of 10YR, value of 5 to 7, and chroma of 3 to 6. The combined thickness of the A and E horizons ranges from 40 to 70 inches. Texture is sand or fine sand.

The Bt horizon has hue of 5YR to 10YR, value of 5 to 7, and chroma of 4 to 8. The Bt horizon has mottles in shades of red or yellow. Texture is sandy loam or sandy clay loam.

Arredondo Series

The Arredondo series consists of nearly level to gently sloping, well drained, rapidly permeable soils on the uplands. These soils formed in thick beds of sandy and loamy marine or eolian deposits. The slopes range from 0 to 5 percent. The water table is at a depth of 72 inches or more. These soils are loamy, siliceous, hyperthermic Grossarenic Paleudults.

Arredondo soils are associated with Candler, Kendrick, Lake, Millhopper, and Sparr soils. Candler soils have lamellae at a depth of more than 50 inches. Kendrick soils have an argillic horizon between depths of 20 and 40 inches. Lake soils are sandy throughout. Millhopper soils are moderately well drained. Sparr soils are somewhat poorly drained.

Typical pedon of Arredondo fine sand, 0 to 5 percent slopes; 0.75 mile south of the Sumter-Marion County line, 0.25 mile west of U.S. Highway 301, NW1/4SE1/4 sec. 6, T. 18 S., R. 23 E.

Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) fine sand; weak fine granular structure; very friable; common uncoated sand grains; common fine roots; slightly acid; clear wavy boundary.

E1—9 to 22 inches; yellowish brown (10YR 5/4) fine sand; weak fine granular structure; very friable; common fine roots; coated sand grains; common fine and medium distinct very dark grayish brown streaks in root channels; slightly acid; clear wavy boundary.

E2—22 to 37 inches; brownish yellow (10YR 6/6) fine sand; weak fine granular structure; very friable; few fine roots; coated sand grains; medium acid; gradual wavy boundary.

EB—37 to 57 inches; strong brown (7.5YR 5/8) loamy fine sand; few fine light brown splotches of uncoated sand grains; weak medium granular structure; friable, few fine roots; well coated sand grains; medium acid; clear wavy boundary.

Bt1—57 to 63 inches; yellowish brown (10YR 5/8) fine sandy loam; moderate medium granular structure; friable; few fine roots; sand grains coated and bridged with clay; strongly acid; gradual wavy boundary.

Bt2—63 to 30 inches; brown (7.5YR 5/4) sandy clay loam; weak medium subangular blocky structure; friable; few fine roots; sand grains coated and bridged with clay; about 10 percent phosphatic pebbles; strongly acid.

Reaction ranges from very strongly acid to medium acid throughout except in areas where the surface layer has been limed.

The Ap horizon has hue of 10YR, value of 3 or 4, and chroma of 1 or 2. Texture is fine sand.

The E horizon has hue of 10YR, value of 5 to 7, and chroma of 3, 4, or 6. It is fine sand or loamy fine sand.

Some pedons have an EB horizon that has hue of 10YR or 7.5YR, value of 5 or 6, and chroma of 4 to 8. It is fine sand or loamy fine sand.

The Bt1 and Bt2 horizons have hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 4 to 8. The Bt1 horizon is loamy fine sand or fine sandy loam, and the Bt2 horizon is fine sandy loam or sandy clay loam. Some pedons have a Bt2 horizon that has less than 5 percent, by volume, red iron concretions.

Astatula Series

The Astatula series consists of nearly level to strongly sloping, excessively drained, very rapidly permeable soils on ridges and knolls. These soils formed in thick deposits of marine or eolian sand. The slopes range from 0 to 15 percent. The water table is at a depth of more than 80 inches. These soils are hyperthermic, uncoated Typic Quartzipsamments.

Astatula soils are associated with Candler and Lake soils. Candler soils have lamellae at a depth of 60 to 80 inches. Lake soils have 5 to 15 percent silt plus clay in its 10- to 40-inch control section.

Typical pedon of Astatula fine sand, rolling; 1 mile south of Sumter County Road 470, 0.5 mile north of U.S. Highway 301, SW1/4NE1/4 sec. 23, T. 20 S., R. 22 E.

A—0 to 3 inches; dark gray (10YR 4/1) fine sand; single grained; loose; common fine and medium roots; medium acid; clear wavy boundary.

A/C—3 to 6 inches; pale brown (10YR 6/3) and grayish brown (10YR 5/2) fine sand; single grained; loose; common fine roots; slightly acid; clear wavy boundary.

C1—6 to 27 inches; light yellowish brown (10YR 6/4) fine sand; single grained; loose; slightly acid; gradual wavy boundary.

C2—27 to 40 inches; pale brown (10YR 6/3) fine sand; single grained; loose; common very pale brown (10YR 7/4) sand splotches; slightly acid; gradual wavy boundary.

C3—40 to 80 inches; very pale brown (10YR 7/4) fine sand; single grained; loose; slightly acid.

The sand or fine sand extends to a depth of 80 inches or more. Reaction is slightly acid to medium acid throughout.

The A or Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 1 or 2. Thickness ranges from 3 to 10 inches. Some pedons have an AC horizon that has hue of 10YR, value of 5 or 6, and chroma of 3 or 4.

The C horizon has hue of 10YR, value of 6 to 8, and chroma of 3 or 4; or hue of 10YR, value of 6 or 7, and chroma of 6. The horizon is fine sand or sand. Silt plus clay in the 10- to 40-inch control section is less than 5 percent.

Basinger Series

The Basinger series consists of nearly level, poorly drained, rapidly permeable soils in poorly defined drainageways, depressions, and broad sloughs. These soils formed in marine sand. The slopes range from 0 to 2 percent. During most years, the water table is at a depth of less than 10 inches for 2 to 6 months and at a depth of 10 to 30 inches for more than 6 months. These soils are siliceous, hyperthermic Spodic Psammaquents.

Basinger soils are associated with Adamsville, Myakka, Ona, Placid, and Pompano soils. Adamsville, Placid, and Pompano soils do not have a Bh horizon. In addition, Adamsville soils are somewhat poorly drained. Myakka and Ona soils have a spodic horizon.

Typical pedon of Basinger fine sand; 700 feet west of U.S. Interstate 75, 3,400 feet south of Coleman Landing Road, NE1/4SE1/4 sec. 34, T. 19 S., R. 22 E.

A—0 to 8 inches; black (10YR 2/1) fine sand; weak fine granular structure; loose; strongly acid; clear wavy boundary.

E1—8 to 15 inches; light brownish gray (10YR 6/2) fine sand; single grained; loose; medium acid; gradual wavy boundary.

E2—15 to 27 inches; light gray (10YR 7/2) fine sand; single grained; loose; medium acid; gradual wavy boundary.

Bh—27 to 45 inches; dark brown (10YR 4/3) fine sand, common medium distinct dark reddish brown (10YR 3/2) weakly cemented bodies; single grained; loose; neutral; gradual wavy boundary.

C—45 to 80 inches; grayish brown (10YR 5/2) fine sand; single grained; loose; neutral.

The solum is 20 to 50 inches thick. Reaction ranges from strongly acid to slightly acid in the A horizon and E horizon and from medium acid to neutral in the Bh horizon and C horizon. Texture is sand or fine sand throughout.

The A horizon has hue of 10YR, value of 2 or 3, and chroma of 1 or 2; or hue of 10YR, value of 4 or 5, and chroma of 2.

The E horizon has hue of 10YR, value of 6 or 7, and chroma of 1 or 2.

The Bh horizon has hue of 5YR, value of 3, and chroma of 3 or 4; or hue of 7.5YR, value of 3, and chroma of 2; or hue of 7.5YR, value of 4, and chroma of 2 or 4; or hue of 10YR, value of 3 or 4, and chroma of 3. In some pedons, this is a B/E horizon.

The C horizon has hue of 10YR, value of 5 to 7, and chroma of 2 or 3.

Candler Series

The Candler series consists of nearly level to strongly sloping, excessively drained, rapidly permeable soils on ridges and knolls. These soils formed in thick marine sand. The slopes are convex and range from 0 to 12 percent. The water table is at a depth of more than 80 inches. These soils are hyperthermic, uncoated Typic Quartzipsamments.

Candler soils are associated with Astatula, Lake, Millhopper, and Tavares soils. Astatula soils do not have lamellae. Lake soils have 5 to 15 percent silt plus clay in the 10- to 40-inch control section. Millhopper and Tavares soils are moderately well drained.

Typical pedon of Candler sand, 0 to 5 percent slopes; 1.4 miles south of Sumter County Road 466A, 0.5 mile west of the Sumter-Lake County line, SE1/4SW1/4 sec. 12, R. 23 E., R. 19 S.

Ap—0 to 8 inches; dark grayish brown (10YR 4/2) sand; single grained; loose; many fine roots; strongly acid; clear wavy boundary.

E1—8 to 30 inches; light yellowish brown (10YR 6/4) sand; single grained; loose; strongly acid; gradual wavy boundary.

E2—30 to 50 inches; yellowish brown (10YR 5/4) sand; single grained; loose; strongly acid; gradual wavy boundary.

E&B1—50 to 65 inches; yellow (10YR 7/6) sand; single grained; loose; uncoated sand grains; common strong brown (7.5YR 5/6) loamy sand lamellae 2 to 5 millimeters thick; slight increase of loamy sand lamellae with depth; well coated sand grains in lamellae; very strongly acid; gradual wavy boundary.

E&B2—65 to 80 inches; yellow (10YR 7/3) sand; single grained; loose; uncoated sand grains; few strong brown (7.5YR 5/6) loamy sand lamellae 1 to 2 millimeters thick; slight decrease of loamy sand lamellae with depth; well coated sand grains in lamellae; very strongly acid.

The solum is 80 inches or more thick. Lamellae is at a depth of about 50 to 75 inches. The cumulative thickness of the lamellae is 1 inch to 3 inches at a depth of 60 to 80 inches. Reaction is very strongly acid to medium acid.

The Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 2.

The E horizon has hue of 10YR, value of 6 or 7, and chroma of 3 or 4; or hue of 10YR, value of 5, and chroma of 4. Texture is sand or fine sand.

The E part of the E&B horizon has hue of 10YR, value of 7, and chroma of 3 to 6; or hue of 10YR, value of 8, and chroma of 2 to 8. The B part of the E&B horizon has hue of 7.5YR, value of 5 or 6, and chroma of 6 or 8. The E&B horizon is sand or loamy sand. The thickness of lamellae ranges from about 1 millimeter to 1 centimeter.

Chobee Series

The Chobee series consists of nearly level, very poorly drained, slowly to very slowly permeable soils on river flood plains. These soils formed in thick beds of loamy marine sediment. The water table is at a depth of 10 inches for more than 6 months during most years. Flooding occurs frequently. The duration of flooding varies between 1 month and 4 months in most years. The slopes are less than 2 percent. These soils are fine-loamy, siliceous, hyperthermic Typic Argiaquolls.

Chobee soils are associated with Floridana, Gator, Nittaw, Paisley, and Vero soils. Floridana soils have an argillic horizon between depths of 20 and 40 inches. Gator soils have an organic surface layer more than 16 inches thick. Nittaw and Paisley soils are in a fine, montmorillonitic family. Paisley and Vero soils are better drained than Chobee soils. In addition, Vero soils have a spodic horizon.

Typical pedon of Chobee loamy fine sand, frequently flooded; 1/3 mile west of Florida Highway 471, 100 feet north of the Withlacoochee River, NE1/4NW1/4 sec. 18, T. 25 S., R. 23 E.

A—0 to 6 inches; black (10YR 2/1) loamy fine sand; moderate medium granular structure; friable; many fine and few medium roots; mildly alkaline; gradual wavy boundary.

Bt1—6 to 11 inches; very dark gray (10YR 3/1) sandy clay loam; weak medium subangular blocky structure; common fine and medium roots; moderately alkaline; gradual wavy boundary.

Bt2—11 to 20 inches; dark brown (10YR 4/1) sandy clay loam; few fine faint dark yellowish brown mottles; weak medium subangular blocky structure; few fine and medium roots; moderately alkaline; gradual wavy boundary.

Btg—20 to 41 inches; gray (10YR 6/1) sandy clay loam; common medium distinct yellowish brown (10YR 5/6) mottles; weak medium subangular blocky structure; few fine roots; few light gray (10YR 7/1) nodules of calcium carbonate; moderately alkaline; gradual wavy boundary.

Cg—41 to 80 inches; light gray (10YR 7/1) fine sandy loam; many coarse distinct yellowish brown (10YR 5/6) mottles; massive; few white (10YR 8/1) nodules of calcium carbonate; moderately alkaline.

The solum is more than 40 inches thick. Reaction is medium acid to mildly alkaline in the A horizon. It ranges from slightly acid to moderately alkaline in the upper part of the argillic horizon and ranges from neutral to moderately alkaline in the lower part of the argillic horizon and in the Cg horizon. The lower part of the argillic horizon and the C horizon is calcareous.

The A horizon has hue of 10YR, value of 2 or 3, and chroma of 1 or 2; or it is neutral and has value of 2 or 3.

The upper part of the Bt horizon has hue of 10YR, value of 2 to 5, and chroma of 1; or hue of 5Y, value of 4 to 6, and chroma of 1 or 2; or it is neutral and has value of 2 to 7. The lower part has hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 2; or hue of 10YR, value of 4 to 6, and chroma of 1; or it is neutral and has value of 5 or 6. The Bt horizon may have mottles. The Bt horizon is fine sandy loam or sandy clay loam and has about 18 to 35 percent clay in the upper 20 inches.

The Cg horizon has hue of 10YR, value of 4 to 7, and chroma of 1 or 2; or hue of 5Y, value of 4 to 6, and chroma of 1 or 2; or hue of 5GY, value of 5 or 6, and chroma of 1. Texture is loamy sand, loamy fine sand, fine sandy loam, or sandy loam.

Delray Series

The Delray series consists of nearly level, very poorly drained, moderately permeable soils in depressional areas. These soils formed in sandy and loamy deposits. The slopes are less than 1 percent. Most areas are ponded for more than 6 months during most years. These soils are loamy, siliceous, hyperthermic Grossarenic Argiaquolls.

Delray soils are associated with EauGallie, Myakka, Ona, Paisley, and Vero soils. EauGallie, Myakka, Ona, and Vero soils have a spodic horizon. In addition, Myakka and Ona soils are sandy throughout. Paisley soils have an argillic horizon within 20 inches of the surface.

Typical pedon of Delray fine sand, depressional; 10 feet west of North Grade Road, 600 feet north of Inner Tube Road, SE1/4SE1/4 sec. 14, T. 23 S., R. 23 E.

A1—0 to 10 inches; black (10YR 2/1) fine sand; weak fine granular structure; very friable; many fine roots; medium acid; clear wavy boundary.

A2—10 to 16 inches; very dark gray (10YR 3/1) fine sand; weak fine granular structure; very friable; many fine roots; medium acid; gradual wavy boundary.

Eg—16 to 60 inches; grayish brown (10YR 5/2) fine sand; single grained; loose; medium acid; clear wavy boundary.

Btg—60 to 80 inches; light brownish gray (10YR 6/2) sandy clay loam; weak fine subangular blocky structure; friable; slightly acid.

The solum is more than 80 inches thick. Reaction ranges from medium acid to neutral throughout.

The A horizon has hue of 10YR, value of 2 or 3, and chroma of 2 or less; or it is neutral and has value of 2.

The Eg horizon has hue of 10YR, value of 4 to 7, and chroma of 2 or less. Texture is fine sand or sand.

The Btg horizon has hue of 10YR, value of 5 or 6, and chroma of 2. Mottles in shades of brown and yellow are none to common in this horizon. Texture is sandy clay loam or fine sandy loam. Some pedons have a BC horizon that has the same matrix colors as the Bt horizon. Texture is loamy fine sand.

EauGallie Series

The EauGallie series consists of nearly level, poorly drained, moderately permeable soils on the flatwoods. These soils formed in sandy and loamy marine sediment. The slopes range from 0 to 2 percent. In most years the water table is at a depth of less than 10 inches for 1 month to 4 months and within 40 inches of the surface for more than 6 months. These soils are sandy, siliceous, hyperthermic Alfic Haplaquods.

EauGallie soils are associated with Delray, Floridana, Myakka, Paisley, and Vero soils. Delray and Floridana soils have a mollic epipedon. Myakka soils are sandy throughout. Paisley and Vero soils have a Bt horizon at a depth of 20 inches, and Vero soils have a Bt horizon at a depth of 40 inches.

Typical pedon of EauGallie fine sand; 1.5 miles south of Florida Highway 50, 1/3 mile west of the Seaboard Coast Line Railroad, SE1/4NE1/4 sec. 23, T. 22 S., R. 23 E.

A—0 to 6 inches; black (10YR 2/1) fine sand; weak fine granular structure; loose; many uncoated sand grains; many medium and few coarse roots; strongly acid; clear wavy boundary.

E1—6 to 18 inches; light gray (10YR 7/2) fine sand; single grained; loose; common medium and fine roots; medium acid; gradual wavy boundary.

E2—18 to 21 inches; grayish brown (10YR 5/2) fine sand; single grained; loose; few fine roots; medium acid; clear wavy boundary.

Bh1—21 to 26 inches; very dark brown (10YR 2/2) fine sand; moderate medium granular structure; very friable; few fine roots; strongly acid; gradual wavy boundary.

Bh2—26 to 34 inches; very dark grayish brown (10YR 3/2) fine sand; weak fine granular structure; loose; few fine roots; strongly acid; gradual wavy boundary.

E'—34 to 50 inches; grayish brown (10YR 5/2) fine sand; weak fine granular structure; loose; strongly acid; clear wavy boundary.

Btg1—50 to 53 inches; light brownish gray (10YR 6/2) fine sandy loam; weak fine subangular blocky structure; very friable; strongly acid; clear wavy boundary.

Btg2—53 to 65 inches; light gray (5Y 6/1) sandy clay loam; few fine and medium distinct yellowish brown (10YR 5/8) and few fine and medium prominent yellowish red (5YR 5/8) mottles; moderate medium subangular blocky structure; friable; medium acid; gradual wavy boundary.

Cg—65 to 80 inches; light gray (10YR 7/1) fine sandy loam; few fine distinct dark yellowish brown (10YR 4/6) and few fine prominent yellowish red (5YR 5/8) mottles; weak fine subangular blocky structure; very friable; medium acid.

The solum ranges from 46 to 90 inches in thickness. Reaction ranges from very strongly acid to medium acid in the A horizon except in areas that have been limed or irrigated with alkaline artesian water. The Bh horizon is very strongly acid to slightly acid. Reaction ranges from strongly acid to mildly alkaline in the Eg, Btg, and Cg horizons.

The A horizon has hue of 10YR, value of 2 to 4, and chroma of 1.

The E horizon has hue of 10YR, value of 5 to 8, and chroma of 1 or 2; or it is neutral and has value of 5. Texture is sand or fine sand.

The Bh horizon has hue of 5YR or 10YR, value of 2 or 3, and chroma of 1 to 3; or hue of 7.5YR, value of 3, and chroma of 2; or it is neutral and has value of 3. Texture is sand or fine sand.

The E' horizon has hue of 2.5Y or 10YR, value of 4 to 8, and chroma of 1 to 3; or hue of 10YR, value of 7 or 8, and chroma of 2 or 3. Texture is sand or fine sand.

The Btg horizon has hue of 10YR, 2.5Y, or 5Y, value of 4 to 7, and chroma of 2 or less. Mottles in shades of brown, yellow, and gray are none to common in this horizon. Texture is sandy loam, fine sandy loam, or sandy clay loam.

The Cg horizon has hue of 10YR or 5Y, value of 5 to 7, and chroma of 1 to 3. This horizon is generally mottled with yellow or brown. Texture ranges from sand to fine sandy loam.

Electra Series

The Electra series consists of nearly level to gently sloping, somewhat poorly drained, slowly permeable soils on slight ridges on the flatwoods. These soils formed in sandy and loamy marine sediment. The slopes range from 0 to 3 percent. The water table is at a depth of 25 to 40 inches for cumulative periods of about 4 months during most years and recedes to a depth of more than 40 inches during dry periods. These soils are sandy, siliceous, hyperthermic Arenic Ultic Haplohumods.

Electra soils are associated with EauGallie, Immokalee, Millhopper, Myakka, Pomello, Sparr, and Vero soils. EauGallie, Immokalee, Myakka, and Vero soils are poorly drained. Pomello soils are sandy throughout. Millhopper and Sparr soils do not have a spodic horizon. In addition, Millhopper soils are moderately well drained.

Typical pedon of Electra fine sand, bouldery subsurface; 75 feet south of Florida Highway 44, SW1/4NE1/4 sec. 9, T. 19 S., R. 21 E.

A—0 to 3 inches; gray (10YR 6/1) fine sand; single grained; very friable; many fine and few medium roots; very strongly acid; clear smooth boundary.

E—3 to 35 inches; white (10YR 8/1) fine sand; single grained; loose common fine and few medium roots; very strongly acid; abrupt wavy boundary.

Bh—35 to 40 inches; dark reddish brown (5YR 3/2) fine sand; weak fine subangular blocky structure; friable; few fine roots; strongly acid; clear wavy boundary.

BE—40 to 46 inches; brown (7.5YR 5/4) fine sand; single grained; loose; few fine roots; strongly acid; gradual wavy boundary.

Btg1—46 to 55 inches; light brownish gray (10YR 6/2) sandy clay loam; many fine distinct strong brown (7.5YR 5/8) and brownish yellow (10YR 6/2) mottles; weak medium subangular blocky structure; friable; sand grains coated and bridged with clay; strongly acid; gradual wavy boundary.

Btg2—55 to 80 inches; light gray (10YR 7/2) fine sandy loam; weak fine subangular blocky structure; very friable; sand grains thinly coated and bridged with clay; strongly acid.

The solum is 60 or more inches thick. Reaction ranges from medium acid to very strongly acid throughout.

The A horizon has hue of 10YR, value of 4 to 6, and chroma of 1. Random boulders or groups of boulders are on the surface and in the A horizon.

The E horizon has hue of 10YR, value of 7 or 8, and chroma of 1 or 2. Texture is sand or fine sand.

The Bh horizon has hue of 5YR or 7.5YR, value of 3, and chroma of 2. Texture is sand or fine sand.

Some pedons have a BE horizon that has hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 4 to 6.

The Btg horizon has hue of 2.5Y, 5Y, or 10YR, value of 6 or 7, and chroma of 1 or 2. This horizon has mottles in shades of yellow, brown, and red. Texture is fine sandy loam, sandy clay loam, or sandy clay.

Everglades Series

The Everglades series consists of nearly level, very poorly drained, rapidly permeable soils in broad marsh areas on lake, stream, and river flood plains. These soils formed in deposits of hydrophytic plant remains. The slopes range from 0 to 1 percent. The water table is at or above the surface layer except in extended dry periods. These soils are euic, hyperthermic Typic Medihemists.

Everglades soils are associated with Gator, Okeelanta, and Terra Ceia soils. Gator and Okeelanta soils have a mineral horizon within 51 inches of the surface. Terra Ceia soils have less than 16 percent fibers, when rubbed.

Typical pedon of Everglades muck, frequently flooded; about 1 mile west of U.S. Interstate 75, 1 mile south of Coleman Landing Road, near northwest corner of sec. 3, T. 20 S., R. 22 E.

Oa—0 to 8 inches; dark brown (7.5YR 3/2) unrubbed, black (N 2/0) rubbed muck, sapric material; about 30 percent fiber, unrubbed, 10 percent fiber, rubbed; moderate medium granular structure; friable; neutral in water; slightly acid in calcium chloride; gradual wavy boundary.

Oe1—8 to 28 inches; dark reddish brown (5YR 3/2) unrubbed, black (5YR 2/1) rubbed mucky peat, hemic material; about 60 percent fiber, unrubbed, 30 percent fiber, rubbed; moderate medium granular structure; sodium pyrophosphate light gray (10YR 7/1); neutral in water; medium acid in calcium chloride; gradual wavy boundary.

Oe2—28 to 80 inches; dark brown (7.5YR 3/2) unrubbed; very dark grayish brown (10YR 3/2) rubbed mucky peat; about 65 percent fiber, unrubbed, 35 percent fiber, rubbed; moderate medium granular structure; friable; sodium pyrophosphate light gray (10YR 6/1); neutral in water; slightly acid in calcium chloride.

The organic material is more than 51 inches thick. Reaction ranges from very strongly acid to mildly alkaline. The pH is more than 4.5 in 0.01 molar calcium chloride throughout.

The Oa horizon has hue of 5YR, 7.5YR, or 10YR, value of 2 or 3, and chroma of 1 or 2; or it is neutral and has value of 2. Fiber content ranges from about 10 to 40 percent, unrubbed, and less than 17 percent, rubbed.

The Oe horizon has hue of 5YR or 10YR, value of 2 or 3, and chroma of 1 to 3; or hue of 7.5YR, value of 3, and chroma of 2; or it is neutral and has value of 2 or 3. The content of fiber ranges from about 35 to 80 percent, unrubbed and about 17 to 40 percent, rubbed. Sodium pyrophosphate extract color of the Oe horizon is gray (10YR 5/1, 6/1), light brownish gray (10YR 6/2), or very pale brown (10YR 7/3, 8/4).

Some pedons have an Oi horizon that has colors that are similar to those of the Oe horizon and also includes value of 4. The content of fiber, rubbed, is more than 40 percent. Sodium pyrophosphate extract color has hue of 10YR, value of 7 or 8, and chroma of 1 or 2. The Oi horizon is less than 10 inches thick if it is in the 12- to 51-inch control section. The Oi horizon can be more than 10 inches thick at a depth of more than 51 inches.

Florahome Series

The Florahome series consists of nearly level to gently sloping, moderately well drained, rapidly permeabile soils on broad landscapes on the uplands. These soils formed in thick deposits of sandy marine or fluvial sediment. The slopes range from 0 to 5 percent. During most years, the water table is at a depth of 48 to 60 inches for 1 month to 4 months and at a depth of 60 to 72 inches for 2 to 4 months. It rises to a depth of 30 to 48 inches for 1 month to 3 months in wet periods and recedes to a depth of more than 72 inches during dry periods. These soils are sandy, siliceous, hyperthermic Quartzipsammentic Haplumbrepts.

Florahome soils are associated with Adamsville, Placid, Sparr, and Tavares soils. Adamsville, Sparr, and Tavares soils do not have an umbric epipedon. Adamsville soils are somewhat poorly drained. Placid soils are very poorly drained. Sparr soils are somewhat poorly drained and have an argillic horizon between depths of 40 and 80 inches.

Typical pedon of Florahome sand, 0 to 5 percent slopes; 500 feet west of Florida Highway 471, 0.26 mile north of Sumter County Road 476, SE1/4SE1/4 sec. 12, T. 21 S., R. 22 E.

Ap—0 to 10 inches; very dark gray (10YR 3/1) sand; weak fine granular structure; very friable; common uncoated sand grains; many fine roots; strongly acid; gradual wavy boundary.

A—10 to 20 inches; very dark grayish brown (10YR 3/2) sand; common fine and medium brown streaks of uncoated sand grains; weak fine granular structure; very friable; common fine roots; strongly acid; gradual wavy boundary.

AC—20 to 33 inches; brown (10YR 5/3) rubbed sand; mixed dark gray (10YR 4/1) and pale brown (10YR 6/3) unrubbed; few fine roots; very strongly acid; gradual wavy boundary.

C1—33 to 41 inches; pale brown (10YR 6/3) sand; common fine light gray streaks of uncoated sand grains; single grained; loose; few fine roots; very strongly acid; gradual wavy boundary.

C2—41 to 72 inches; light gray (10YR 7/2) sand; few fine distinct strong brown and common coarse distinct yellowish brown mottles; single grained; loose; few fine roots; very strongly acid; gradual wavy boundary.

C3—72 to 80 inches; light gray (10YR 7/2) sand; few fine distinct strong brown mottles; single grained; loose; very strongly acid.

The solum is 20 to 35 inches thick. Reaction ranges from very strongly acid to medium acid throughout except where the surface layer has been limed.

The A horizon has hue of 10YR, value of 3 or less, and chroma of 2 or less.

Some pedons have an AC horizon that has hue of 10YR, value of 4 to 7, and chroma of 4 or less. Texture is sand or fine sand.

The upper part of the C horizon, to a depth of 40 inches or more, has hue of 10YR, value of 4 to 7, and chroma of 3 or 4. Some pedons have streaks of uncoated sand grains that are light in color. The lower part of the C horizon has hue of 10YR, value of 4 to 7, and chroma of 1 to 4 and has mottles in shades of yellow and brown.

Floridana Series

The Floridana series consists of nearly level, very poorly drained, slowly to very slowly permeable soils in depressional areas. These soils formed in thick beds of sandy and loamy marine sediment. The slopes are less than 2 percent. These soils are ponded for more than 6 months during most years. These soils are loamy, siliceous, hyperthermic Arenic Argiaquolls.

Floridana soils are associated with Immokalee, Kanapaha, Myakka, Paisley, Ft. Green, EauGallie, and Vero soils. Immokalee, Myakka, EauGallie, and Vero soils have a spodic horizon. In addition, Immokalee and Myakka soils are sandy throughout. Kanapaha soils have a Bt horizon at a depth of more than 40 inches. Paisley soils have a Bt horizon within 20 inches of the surface. Ft. Green soils have a thinner A horizon than Floridana soil, and they are poorly drained. The associated soils do not have a mollic epipedon.

Typical pedon of Floridana mucky fine sand, depressional; 1 mile east of Sumter County Road 470, 2.4 miles south of Florida Highway 44, NW1/4NE1/4 sec. 24, T. 19 S., R. 21 E.

A1—0 to 4 inches; black (N 2/0) mucky fine sand; weak fine granular structure; very friable; common fine roots; sand grains well coated with organic matter; strongly acid; clear wavy boundary.

A2—4 to 12 inches; very dark gray (N 3/0) fine sand; weak fine granular structure; very friable; common fine roots; sand grains coated with organic matter; strongly acid; clear wavy boundary.

Eg1—12 to 15 inches; dark grayish brown (10YR 4/2) fine sand; single grained; loose; few fine roots; strongly acid; gradual wavy boundary.

Eg2—15 to 25 inches; light brownish gray (10YR 6/2) fine sand; single grained; loose; few fine roots; medium acid; clear wavy boundary.

Btg1—25 to 40 inches; light brownish gray (10YR 6/2) sandy clay loam; common fine distinct yellowish brown (10YR 5/8) and strong brown (7.5YR 5/6) mottles; weak fine subangular blocky structure; slightly plastic; few fine roots; sand grains coated and bridged with clay; medium acid; gradual wavy boundary.

Btg2—40 to 80 inches; grayish brown (10YR 5/2) sandy clay loam; common fine faint yellowish brown mottles; weak fine subangular blocky structure; slightly firm; common medium and coarse lenses and pockets of fine sandy loam; medium acid.

The solum is 48 to 80 inches or more thick. Reaction ranges from strongly acid to moderately alkaline.

The A horizon has hue of 10YR, value of 2 or 3, and chroma of 1 or 2; or it is neutral and has value of 2 or 3.

The Eg horizon has hue of 10YR, value of 4 to 7, and chroma of 1 or 2.

The Btg horizon has hue of 10YR, value of 4, and chroma of 1; or hue of 10YR or 5Y, value of 5 to 7, and chroma of 1 or 2; or it is neutral and has value of 4 to 7. This horizon can have mottles of gray, yellow, and brown. Texture is fine sandy loam or sandy clay loam. Some pedons have a Btg3 horizon that has the same matrix colors as those of the Btg1 and Btg2 horizons. Texture is fine sandy loam.

Some pedons have a Cg horizon that has hue of 5Y or 2.5Y, value of 5 to 7, and chroma of 1. Texture is fine sand or loamy fine sand.

Ft. Green Series

The Ft. Green series consists of nearly level to gently sloping, poorly drained, slowly or moderately slowly permeable soils on broad, low ridges and small knolls. These soils formed in sandy and loamy marine sediment. The slopes range from 0 to 3 percent. The water table is at a depth of less than 10 inches for 1 month to 4 months during most years. These soils are loamy, siliceous, hyperthermic Arenic Ochraqualfs.

These soils are associated with EauGallie, Floridana, Kanapaha, Mabel, Paisley, and Vero soils. Floridana soils have a mollic epipedon. They are very poorly drained. Mabel and Paisley soils have an argillic horizon within 20 inches of the surface. In addition, Mabel soils are somewhat poorly drained. Kanapaha and EauGallie soils have a Bt horizon at a depth of more than 40 inches. EauGallie and Vero soils have a spodic horizon.

Typical pedon of Ft. Green fine sand, bouldery subsurface; 1,200 feet north of Sumter County Road 48, 2.5 miles east of Florida Highway 471, NE1/4NW1/4 sec. 21, T. 21 S., R. 23 E.

Ap—0 to 6 inches; dark grayish brown (10YR 4/2) fine sand; weak fine granular structure; loose; many uncoated sand grains; many fine roots; neutral; clear wavy boundary.

E1—6 to 14 inches; grayish brown (10YR 5/2) fine sand; common fine distinct yellowish brown (10YR 5/6) mottles; single grained; loose; common fine roots; neutral; gradual wavy boundary.

E2—14 to 28 inches; light gray (10YR 7/2) fine sand; few fine distinct yellowish brown (10YR 5/8) mottles; single grained; loose; few fine roots; neutral; clear smooth boundary.

Btg1—28 to 38 inches; gray (10YR 5/1) sandy clay loam; common fine distinct (10YR 5/6) mottles; weak medium subangular blocky structure; firm and slightly sticky and plastic when wet; sand grains coated and bridged with clay; few fine roots; neutral; gradual wavy boundary.

Btg2—38 to 58 inches; dark gray (N 4/0) sandy clay loam; common fine and coarse distinct yellowish brown (10YR 5/6) and few fine distinct red (7.5YR 4/8) mottles; moderate medium subangular blocky structure; firm and sticky and plastic when wet; few fine roots; thin discontinuous clay skins on faces of peds and root channels; about 10 percent limestone cobbles; neutral; gradual wavy boundary.

BC—58 to 80 inches; gray (10YR 5/1) cobbly sandy clay loam; common coarse distinct yellowish brown (7.5YR 5/6) mottles; massive breaking to weak fine subangular blocky structure; sticky and plastic; about 20 percent limestone cobbles; neutral.

The solum is more than 60 inches thick. Reaction ranges from strongly acid to neutral in the A horizon and E horizon and from medium acid to mildly alkaline in the Bt horizon and C horizon.

The A horizon has hue of 10YR, value of 2 to 4, and chroma of 1 or 2.

The E horizon has hue of 10YR, value of 5 to 7, and chroma of 1 or 2. Texture is sand or fine sand.

A thin Bw horizon is in some pedons. It has hue of 10YR, value of 4 to 6, and chroma of 2 or 3. Texture is sand or fine sand.

The Btg horizon has hue of 10YR, value of 4 to 7, and chroma of 1 or 2; or hue of 5Y, value of 5 to 7, and chroma of 1 or 2; or it is neutral and has value of 4 to 7. The Btg horizon has few to common mottles of gray, yellow, brown, or red. Texture is dominantly sandy clay loam but ranges from fine sandy loam to sandy clay. The weighted average clay content of the upper 20 inches of the argillic horizon is 18 to 35 percent. Cobbles are common in some subhorizons.

In the BC horizon and in pedons that have a Ck horizon, the colors and textures are the same as those of the Btg horizon. Carbonatic nodules are few to many in the Ck horizon. Limestone boulders are none to common.

Gator Series

The Gator series consists of nearly level, very poorly drained soils in large marshes and swamps. These soils formed in moderately thick beds of woody and hydrophytic plant remains underlain by beds of loamy and sandy marine sediment. The slopes are less than 1 percent. The water table is always at or near the surface except during extended periods of drought. The Gator soils are subject to flooding in most years. These soils are loamy, siliceous, euic, hyperthermic Terric Medisaprists.

Gator soils are associated with Floridana, Paisley, Terra Ceia, and Vero soils. Floridana, Vero, and Paisley soils are mineral soils. Terra Ceia soils consists of organic material to a depth of more than 51 inches.

Typical pedon of Gator muck, frequently flooded; about 1.25 miles south of the Marion-Sumter County line, 2.3 miles east of the Withlacoochee River, SE1/4NE1/4 sec. 12, T. 18 S., R. 20 E.

Oa1—0 to 10 inches; very dark grayish brown (10YR 3/2) muck, sapric material; about 15 percent fiber, less than 5 percent rubbed; moderate medium granular structure; friable; neutral in water; slightly acid in calcium chloride; gradual wavy boundary.

Oa2—10 to 25 inches; black (N 2/0) muck, sapric material; about 15 percent fiber, less than 5 percent rubbed; moderate medium granular structure; friable; neutral in water; slightly acid in calcium chloride; clear wavy boundary.

Cg1—25 to 40 inches; light gray (10YR 7/2) fine sand; single grained; loose; moderately alkaline; clear wavy boundary.

Cg2—40 to 60 inches; gray (10YR 5/1) sandy clay loam; massive; slightly sticky and plastic; moderately alkaline; gradual wavy boundary.

Cg3—60 to 80 inches; gray (10YR 5/1) fine sandy loam; massive; nonsticky; moderately alkaline.

The solum is 16 to 50 inches thick. Reaction is slightly acid to moderately alkaline.

The Oa horizon has hue of 10YR or 5YR, value of 2 or 3, and chroma of 1 or 2.

The Cg1 horizon has hue of 10YR, value of 6 to 7, and chroma of 2. Texture is fine sand or fine sandy loam.

The Cg2 and Cg3 horizons have hue of 10YR, value of 5 or 6, and chroma of 1; or hue of 10YR, value of 6 or 7, and chroma of 2; or hue of 5Y, value of 6 or 7, and chroma of 2; or hue of 5Y, value of 4 or 6, and chroma of 1. Texture of the Cg2 and Cg3 horizons is fine sandy loam, sandy clay loam, or sandy clay.

Immokalee Series

The Immokalee series consists of nearly level, poorly drained, moderately permeable soils in broad flatwood areas. These soils formed in sandy marine sediment. The slopes range from 0 to 2 percent. In most years, the water table is at a depth of 10 to 40 inches for more than 8 months. It rises to a depth of less than 10 inches for 2 months and recedes to a depth of more than 40 inches during dry periods. These soils are sandy, siliceous, hyperthermic Arenic Haplaquods.

Immokalee soils are associated with Adamsville, Basinger, Myakka, Oldsmar, Pomello, and Tavares soils. Adamsville and Pomello soils are somewhat poorly drained. Basinger soils have a weak stain to a depth of 30 inches or less. Myakka soils have a spodic horizon within 30 inches of the surface. Oldsmar soils have an argillic horizon beneath a spodic horizon. Tavares soils are moderately well drained. They do not have a spodic horizon.

Typical pedon of Immokalee sand; about 2.2 miles east of Sumter County Road 470, 20 feet south of Florida Highway 44, NE1/4SE1/4 sec. 6, T. 19 S., R. 21 E.

A—0 to 5 inches; very dark gray (10YR 3/1) sand; salt-and-pepper appearance; weak fine granular structure; very friable; many fine and medium roots; strongly acid; clear smooth boundary.

E—5 to 34 inches; light gray (10YR 7/1) sand; single grained; loose common fine and medium roots; very strongly acid; clear wavy boundary.

Bh—34 to 39 inches; dark reddish brown (5YR 3/2) sand; weak fine granular structure; very friable; few fine roots; very strongly acid; gradual wavy boundary.

Bh2—39 to 46 inches; dark reddish brown (5YR 3/3) sand; weak medium subangular blocky structure; friable; few fine roots; very strongly acid; gradual wavy boundary.

BC—46 to 58 inches; dark brown (7.5YR 4/4) sand; single grained; loose; very strongly acid; gradual wavy boundary.

C—58 to 80 inches; brown (10YR 5/4) sand; single grained; loose; very strongly acid.

The solum is 50 to 80 inches or more thick. Reaction ranges from medium acid to extremely acid throughout. Texture is sand or fine sand throughout.

The A horizon has hue of 10YR, value of 2 to 4, and chroma of 1 or 2; or it is neutral and has value of 2.

The E horizon has hue of 10YR, value of 5 to 8, and chroma of 1 or 2. Some pedons are mottled in shades of gray, yellow, and brown.

The Bh horizon has hue of 5YR or 10YR, value of 2 or 3, and chroma of 1 to 3; or hue of 7.5YR, value of 3, and chroma of 2.

The BC horizon has hue of 10YR, value of 3 to 5, and chroma of 3 or 4; or hue of 7.5YR, value of 4, and chroma of 2 or 4.

The C horizon has hue of 10YR, value of 5 to 7, and chroma of 1 to 4. This horizon can have mottles in shades of brown, yellow, or gray.

Kanapaha Series

The Kanapaha series consists of nearly level, poorly drained, moderately slowly or slowly permeable soils on low, broad flats and low knolls. These soils formed in thick beds of sandy and loamy marine sediment. The slopes range from 0 to 2 percent. During most years, the water table is at a depth of 10 to 40 inches for 3 to 4 months. It rises to a depth of less than 10 inches for 1 month to 3 months and recedes to a depth of more than 40 inches during dry periods. These soils are loamy, siliceous, hyperthermic Grossarenic Paleaquults.

Kanapaha soils are associated with Adamsville, EauGallie, Millhopper, Sparr, and Sumterville soils. Adamsville, Sparr, and Sumterville soils are somewhat poorly drained. In addition, Sumterville soils have an argillic horizon between depths of 20 and 40 inches. Adamsville soils do not have an argillic horizon. Millhopper soils are moderately well drained. EauGallie soils have a spodic horizon within 30 inches of the surface.

Typical pedon of Kanapaha sand, bouldery subsurface; 1.6 miles east of U.S. Highway 301, 200 feet south of Gant Lake Canal, SW1/4NE1/4 sec. 17, T. 22 S., R. 22 E.

Ap—0 to 6 inches; very dark gray (10YR 3/1) sand; weak fine granular structure; very friable; very strongly acid; clear smooth boundary.

E1—6 to 33 inches; grayish brown (10YR 5/2) sand; single grained; loose; few fine roots; strongly acid; clear wavy boundary.

E2—33 to 45 inches; light gray (10YR 7/2) fine sand; single grained; loose; few fine roots in upper part; strongly acid; clear wavy boundary.

Btg1—45 to 55 inches; light gray (10YR 7/2) sandy loam; weak medium subangular blocky structure; very friable; strongly acid; gradual wavy boundary.

Btg2—55 to 70 inches; light brownish gray (10YR 6/2) sandy clay loam; weak medium subangular blocky structure; friable; strongly acid; clear wavy boundary.

BCg—70 to 80 inches; light brownish gray (10YR 6/2) sandy loam; weak medium subangular blocky structure; very friable; strongly acid.

The solum is 60 or more inches thick. Reaction is strongly acid or medium acid throughout.

The A or Ap horizon has hue of 10YR, value of 3 to 5, and chroma of 1 or 2. Texture is sand or fine sand.

The E horizon has hue of 10YR, value of 5 to 7, and chroma of 1 or 2. This horizon can have mottles or streaks in shades of gray, yellow, and brown. Texture is sand or fine sand.

The Btg horizon has hue of 10YR, value of 5 to 7, and chroma of 1 or 2; or it is neutral and has value of 4 to 6. This horizon has few to many mottles in shades of red, yellow, and brown. Texture ranges from sandy loam to sandy clay loam. The BCg horizon has the same range in colors and textures as the Btg horizon.

Kendrick Series

The Kendrick series consists of nearly level to gently sloping, well drained, moderately to moderately slowly permeable soils on the uplands. These soils formed in loamy marine sediment. The slopes range from 0 to 5 percent. These soils are loamy, siliceous, hyperthermic Arenic Paleudults.

Kendrick soils are associated with Arredondo, Candler, and Lake soils. Arredondo soils have an argillic horizon at a depth of more than 40 inches. Lake soils do not have an argillic horizon. Candler soils have lamellae at a depth of more than 50 inches.

Typical pedon of Kendrick fine sand, 0 to 5 percent slopes; 800 feet east of U.S. Highway 301, 100 feet south of Sumter County Road 466, SW1/4NE1/4 sec. 17, T. 18 S., R. 23 E.

A—0 to 8 inches; dark grayish brown (10YR 4/2) fine sand; weak fine granular structure; loose; many fine and medium roots; slightly acid; abrupt wavy boundary.

E1—8 to 22 inches; yellowish brown (10YR 5/4) fine sand; single grained; loose; few fine roots; medium acid; gradual wavy boundary.

E2—22 to 33 inches; yellowish brown (10YR 5/6) fine sand; single grained; loose; few fine roots; medium acid; gradual wavy boundary.

Bt1—33 to 58 inches; strong brown (7.5YR 5/6) fine sandy loam; weak fine subangular blocky structure; very friable; medium acid; clear wavy boundary.

Bt2—58 to 68 inches; strong brown (7.5YR 5/8) fine sandy loam; weak fine subangular blocky structure; very friable; medium acid; clear wavy boundary.

Bt3—68 to 75 inches; reddish yellow (7.5YR 6/6) sandy clay loam; few medium distinct yellowish red (5YR 5/8) mottles; moderate fine subangular blocky structure; friable; medium acid; clear wavy boundary.

Bt4—75 to 80 inches; reddish yellow (7.5YR 6/6) sandy clay loam; few medium distinct yellowish red (5YR 5/8) and many fine distinct light gray (10YR 7/2) mottles; moderate fine subangular blocky structure; friable; medium acid.

The solum is 60 inches or more thick. Reaction ranges from very strongly acid to medium acid except in areas that have been limed. Reaction in these areas is slightly acid.

The Ap or A horizon has hue of 10YR, value of 3 to 5, and chroma of 1 or 2.

The E horizon has hue of 10YR, value of 5 or 6, and chroma of 3 to 6. Texture is fine sand or loamy fine sand.

The Bt horizon has hue of 10YR or 7.5YR, value of 5 or 6, and chroma of 3 to 8. This horizon has mottles in shades of yellow and red. It is fine sandy loam or sandy clay loam.

Lake Series

The Lake series consists of nearly level to gently sloping, excessively drained, very rapidly or rapidly permeable soils on low hills. These soils formed in thick deposits of marine or eolian sand. The slopes range from 0 to 5 percent. The water table is at a depth of more than 80 inches. These soils are hyperthermic, coated Typic Quartzipsamments.

Lake soils are associated with Apopka, Arredondo, Astatula, and Candler soils. Apopka and Arredondo soils have an argillic horizon between depths of 40 and 80 inches. Astatula and Candler soils have less than 5 percent silt plus clay in the 10- to 40-inch control section.

Typical pedon of Lake fine sand, 0 to 5 percent slopes; 0.4 mile north of Sumter County Road 466, 500 feet west of U.S. Highway 301, SE1/4SE1/4 sec. 7, T. 18 S., R. 23 E.

Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) fine sand; weak fine granular structure; very friable; many fine and coarse roots; few clean light gray sand grains; few fine charcoal chips; strongly acid; clear wavy boundary.

C1—9 to 23 inches; brown (7.5YR 4/4) fine sand; single grained; loose; few fine and coarse roots, few fine charcoal chips; strongly acid; clear wavy boundary.

C2—23 to 39 inches; yellowish brown (10YR 5/8) fine sand; single grained; loose; few fine roots; few fine charcoal chips; many thinly coated sand grains; strongly acid; gradual wavy boundary.

C3—39 to 63 inches; strong brown (7.5YR 5/8) fine sand; single grained; loose; few fine roots; many thinly coated sand grains; strongly acid; gradual wavy boundary.

C4—63 to 80 inches; brownish yellow (10YR 6/8) fine sand; single grained; loose; few uncoated sand grains; strongly acid.

The texture is sand or fine sand to a depth of 80 inches or more. Reaction ranges from strongly acid or very strongly acid in the A horizon and from very strongly acid to slightly acid in the C horizon.

The A horizon has hue of 10YR, value of 3 to 5, and chroma of 2 or 3.

The C horizon has hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 3 to 8. The lower part of the C horizon has chroma of 3.

Mabel Series

The Mabel series consists of nearly level to gently sloping, somewhat poorly drained, slowly permeable soils on uplands. These soils formed in moderately thick, loamy and clayey marine sediment. The slopes range from 0 to 5 percent. During most years, the water table is at a depth of 18 to 30 inches for 2 to 6 months and at a depth of 30 to 80 inches for 4 to 6 months. It rises to a depth of less than 18 inches for 1 week to 2 weeks during periods of heavy precipitation. These soils are fine, mixed, hyperthermic Albaquic Hapludalfs.

Mabel soils are associated with EauGallie, Floridana, Oldsmar, Paisley, Sumterville, and Vero soils. Floridana soils have a mollic epipedon. Vero, Oldsmar, and EauGallie soils have a spodic horizon. Paisley soils are poorly drained. Sumterville soils have an argillic horizon between depths of 20 to 40 inches.

Typical pedon of Mabel fine sand, bouldery subsurface, 0 to 5 percent slopes; 1,400 feet north of Florida Highway 44, 944 feet east of Sumter County Road 470, NE1/4SE1/4 sec. 2, T. 19 S., R. 21 E.

A—0 to 6 inches; dark gray (10YR 4/1) fine sand; weak fine granular structure; loose; many uncoated sand grains; many fine and medium roots; very strongly acid; clear wavy boundary.

E1—6 to 10 inches; grayish brown (10YR 5/2) fine sand; single grained; loose; few fine roots; strongly acid; gradual wavy boundary.

E2—10 to 16 inches; light brownish gray (10YR 6/2) fine sand; common fine faint brownish yellow mottles; single grained; loose; few fine roots; medium acid; abrupt smooth boundary.

Bt1—16 to 24 inches; yellowish brown (10YR 5/6) sandy clay loam; few coarse distinct red (2.5YR 4/6) mottles; weak fine subangular blocky structure; firm, slightly sticky and slightly plastic; sand grains coated and bridged with clay; few fine roots; medium acid; gradual wavy boundary.

Bt2—24 to 30 inches; yellowish brown (10YR 5/6) clay; many medium distinct light brownish gray (10YR 6/2) and few fine distinct strong brown (7.5YR 5/6) mottles; moderate fine subangular blocky structure; firm, slightly sticky and slightly plastic; thin continuous clay films along faces of peds; 10 percent calcium carbonate intrusions approximately 10 centimeters wide; violently effervescent; few fine roots; mildly alkaline; gradual wavy boundary.

Ck1—30 to 43 inches; light gray (5YR 7/1) clay; many coarse distinct brownish yellow (10YR 6/6) and few fine distinct red (5YR 4/6) mottles; massive; firm, slightly sticky and slightly plastic; 10 percent fine soft white calcium carbonate nodules; violently effervescent; few fine roots; moderately alkaline; gradual wavy boundary.

Ck2—43 to 56 inches; light gray (5YR 7/1) clay loam; many coarse distinct reddish yellow (5YR 6/8) and few medium distinct brownish yellow (10YR 6/6) mottles; massive; firm, slightly sticky and slightly plastic; 25 percent fine soft white calcium carbonate nodules; violently effervescent; common white coarse gravel and cobbles; moderately alkaline, gradual wavy boundary.

Ck3—56 to 80 inches; light gray (5YR 7/1) clay loam; few medium distinct reddish yellow (5YR 6/8) and few medium distinct brownish yellow (10YR 6/6) mottles; massive; firm, slightly sticky and slightly plastic; 30 percent fine soft white calcium carbonate nodules; violently effervescent; common hard white coarse gravel and cobbles; moderately alkaline.

The solum is 30 to 45 inches thick. Reaction ranges from very strongly acid to medium acid in the A and E horizons and from medium acid to moderately alkaline in the Bt and C horizons.

The A or Ap horizon has hue of 10YR, value of 3 to 5, and chroma of 1 or 2.

The E horizon has hue of 10YR, value of 5 or 6, and chroma of 2 or 3. This horizon has mottles in shades of yellow and brown.

The Bt horizon has hue of 10YR, value of 5, and chroma of 4 to 8. This horizon has mottles in shades of yellow and brown. Texture is sandy clay loam or sandy clay.

The Bt2 horizon has hue of 10YR, value of 4 to 7, and chroma of 6 or less. This horizon has mottles in shades of gray, yellow, and brown. Texture is sandy clay or clay. The upper 20 inches of the argillic horizon is 35 to 60 percent clay and is less than 30 percent silt.

The Ck horizon has hue of 5YR, value of 7 or 8, and chroma of 1. The Ck horizon has mottles in shades of yellow. Texture is clay loam, clay, or sandy clay loam. Common calcium carbonate nodules 1 to 3 centimeters and common limestone cobbles are in this horizon.

Malabar Series

The Malabar series consists of nearly level, frequently flooded, poorly drained soils on the flood plains of major rivers and streams. These soils are rapidly permeable to a depth of about 48 inches and slowly to very slowly permeable to a depth of about 80 inches. The Malabar soils formed in sandy and loamy marine sediment. The slopes range from 0 to 2 percent. The water table is at a depth of less than 10 inches for 2 to 6 months during most years. These soils are loamy, siliceous, hyperthermic Grossarenic Ochraqualfs.

Malabar soils are associated with Everglades, Ft. Green, Gator, Oldsmar, Placid, and Terra Ceia soils. Everglades, Gator, and Terra Ceia soils are of organic origin. Oldsmar soils have a spodic horizon. Ft. Green soils have an argillic horizon at a depth of 20 to 40 inches. The Placid soils have an umbric epipedon and are sandy throughout.

Typical pedon of Malabar fine sand, frequently flooded; 2.8 miles south of Withlacoochee River outlet, 1.7 miles west of Sumter County Road 416, NE1/4NW1/4 sec. 13, T. 20 S., R. 21 E.

A—0 to 6 inches; black (10YR 2/1) fine sand; weak fine granular structure; loose; common uncoated sand grains; many fine and few medium roots; slightly acid; gradual wavy boundary.

E—6 to 24 inches; light gray (10YR 7/2) fine sand; many medium distinct yellow (10YR 7/8) mottles; single grained; loose; few fine roots; moderately alkaline; clear wavy boundary.

Bw1—24 to 35 inches; pale brown (10YR 6/3) fine sand; single grained; weak fine granular structure; very friable; few fine roots; iron coatings on sand grains; moderately alkaline; gradual wavy boundary.

Bw2—35 to 48 inches; very pale brown (10YR 7/4) fine sand; single grained; weak fine granular structure; very friable; iron coatings on sand grains; moderately alkaline; clear wavy boundary.

Btg1—48 to 74 inches; olive gray (5Y 5/2) fine sandy loam; single grained; weak fine subangular blocky structure; very friable; moderately alkaline; gradual wavy boundary.

Btg2—74 to 80 inches; light gray (5Y 7/1) sandy clay loam; few fine faint bluish gray mottles; weak medium subangular blocky structure; friable; sand grains coated and bridged with clay; neutral.

The solum is 60 or more inches thick. Reaction ranges from medium acid to moderately alkaline throughout.

The A horizon has hue of 10YR, value of 2 or 3, and chroma of 1 or 2.

The E horizon has hue of 10YR, value of 5 to 8, and chroma of 2 to 4. This horizon has mottles in shades of yellow and brown. Texture is sand or fine sand.

The Bw horizon has hue of 10YR, value of 5 to 7, and chroma of 4 to 8; or hue of 10YR, value of 6, and chroma of 3 to 7; or hue of 7.5YR, value of 5, and chroma of 6 or 8. Texture is sand or fine sand.

Some pedons have an E' horizon below the Bw horizon. Pedons that have an E' horizon have colors that are similar to those in the E horizon.

The Btg horizon has hue of 10YR, value of 5 to 7, and chroma of 1; or hue of 2.5Y or 5Y, value of 5 to 7, and chroma of 1 or 2. This horizon has mottles in shades of yellow and brown. Texture is fine sandy loam, sandy loam, or sandy clay loam.

Millhopper Series

The Millhopper series consists of nearly level to gently sloping, moderately well drained, moderately or moderately slowly permeable soils on broad uplands. These soils formed in thick beds of sandy and loamy marine sediment. The slopes are 0 to 5 percent. During most years, the water table is at a depth of 40 to 60 inches for 1 month to 4 months and at a depth of 60 to 80 inches for 2 to 4 months. These soils are loamy, siliceous, hyperthermic Grossarenic Paleudults.

Millhopper soils are associated with Arredondo, Candler, Kendrick, Lake, and Sparr soils. Arredondo and Kendrick soils are well drained. In addition, Kendrick soils have an argillic horizon between depths of 20 and 40 inches. Candler and Lake soils are excessively drained. In addition, Candler soils have lamellae between depths of 50 and 80 inches, and Lake soils are sandy throughout. Sparr soils are somewhat poorly drained.

Typical pedon of Millhopper sand, 0 to 5 percent slopes; 200 feet north of Florida Highway 44, 1.35 miles east of Sumter County Road 139, SW1/4SE1/4 sec. 15, T. 19 S., R. 23 E.

Ap—0 to 5 inches; dark grayish brown (10YR 4/2) sand; weak fine granular structure; loose; common fine and coarse roots; strongly acid; clear wavy boundary.

E1—5 to 32 inches; light yellowish brown (10YR 6/4) fine sand; single grained; loose; few medium roots; strongly acid; gradual wavy boundary.

E2—32 to 44 inches; very pale brown (10YR 7/4) fine sand; few fine faint brownish yellow mottles; single grained; loose; common light gray (10YR 7/2) sand stripping; few medium roots; strongly acid; gradual wavy boundary.

EB—44 to 50 inches; brownish yellow (10YR 6/6) fine sand; few fine faint very pale brown mottles; single grained; loose; strongly acid; clear wavy boundary.

Bt—50 to 56 inches; brownish yellow (10YR 6/6) sandy clay loam; common medium distinct strong brown (7.5YR 5/8) mottles; weak fine subangular blocky structure; very friable; very strongly acid; gradual wavy boundary.

Btg1—56 to 72 inches; light gray (10YR 7/2) sandy clay loam; common medium distinct brownish yellow (10YR 6/8) and few fine distinct red (10R 4/8) mottles; weak fine subangular blocky structure; friable; thin clay films on faces of peds; very strongly acid; gradual wavy boundary.

Btg2—72 to 80 inches; light gray (10YR 7/2) sandy clay loam; few coarse prominent red (10R 4/8) and few coarse distinct strong brown (7.5YR 5/8) mottles; weak fine subangular blocky structure; friable; thin clay films on faces of peds; very strongly acid.

The solum is 80 inches or more thick. Reaction ranges from strongly acid to slightly acid in the A and E horizons and from very strongly acid to medium acid in the Bt and Btg horizons.

The Ap horizon has hue of 10YR, value of 4, and chroma of 1 or 2.

The E horizon has hue of 10YR, value of 5 to 7, and chroma of 3 or 4. In the lower part of the E horizon, stripped sand grains have hue of 10YR, value of 7, and chroma of 2 or less. Mottles in shades of brown and yellow range from none to common. The thickness of the A and E horizons ranges from 40 to 75 inches. Texture is sand or fine sand.

The Bt horizon has hue of 10YR, value of 6 or 7, and chroma of 2 to 6. This horizon has mottles in shades of yellow and brown. Texture is loamy fine sand, fine sandy loam, or sandy clay loam that in places has pockets of sand. The Btg horizon has hue of 5Y or 2.5Y, value of 5 to 7, and chroma of 1 or 2; or hue of 10YR, value of 7, and chroma of 2 or less. The Btg horizon is commonly mottled in shades of yellow and brown. Texture is fine sandy loam or sandy clay loam.

Monteocha Series

The Monteocha series consists of nearly level, very poorly drained, moderately permeable soils in depressional areas. These soils formed in sandy and loamy marine deposits. The slopes range from 0 to 2 percent. During most years, the water table is at a depth of 10 inches for 4 months or more; and in most areas, the soils are ponded for more than 6 months. These soils are sandy, siliceous, hyperthermic Ultic Haplaquods.

Monteocha soils are associated with Adamsville, Oldsmar, EauGallie, and Tavares soils. Adamsville and Tavares soils do not have an argillic horizon. Oldsmar and EauGallie soils do not have an umbric epipedon. In addition, Oldsmar soils have a spodic horizon at a depth of more than 30 inches.

Typical pedon of Monteocha fine sand, depressional; 0.6 mile north of Florida Highway 44, 2.6 miles west of Sumter County Road 475, NE1/4NW1/4 sec. 1, T. 19 S., R. 21 E.

A—0 to 11 inches; very dark gray (10YR 3/1) fine sand; weak fine granular structure; very friable; many fine roots; strongly acid; clear wavy boundary.

E—11 to 28 inches; gray (10YR 6/1) fine sand; single grained; loose; common fine roots; strongly acid; clear wavy boundary.

Bh—28 to 34 inches; very dark grayish brown (10YR 3/2) fine sand; weak fine subangular blocky structure; very friable; common fine roots; sand grains well coated with organic matter; strongly acid; clear wavy boundary.

BE—34 to 40 inches; dark grayish brown (10YR 4/2) fine sand; single grained; loose; strongly acid; gradual wavy boundary.

E'—40 to 55 inches; brown (10YR 5/3) fine sand; single grained; loose; strongly acid; clear wavy boundary.

Btg—55 to 80 inches; gray (10YR 6/1) fine sandy loam; weak fine subangular blocky structure; very friable; sand grains bridged with clay; strongly acid.

The solum is more than 80 inches thick. Reaction ranges from extremely acid to strongly acid throughout.

The A horizon has hue of 10YR, value of 2 or 3, and chroma of 1; or it is neutral and has value of 2. Texture is fine sand.

The E horizon has hue of 10YR, value of 5 to 7, and chroma of 1 or 2. Texture is sand or fine sand.

The Bh horizon has hue of 7.5YR, value of 3, and chroma of 2; or hue of 10YR, value of 2 or 3, and chroma of 2. Texture is sand or fine sand.

Some pedons have a BE horizon that has hue of 10YR, value of 4, and chroma of 2 or 3. Texture is sand or fine sand.

The E' horizon has hue of 10YR, value of 5 to 7, and chroma of 2 or 3. Texture is sand or fine sand.

The Btg horizon has hue of 10YR, value of 5 or 6, and chroma of 1 or 2; or it is neutral and has value of 5 or 6. Mottles in shades of yellow or brown may be present in this horizon. Texture is fine sandy loam, sandy loam, or sandy clay loam.

Myakka Series

The Myakka series consists of nearly level, poorly drained, moderately to moderately rapidly permeable soils on the flatwoods. These soils formed in sandy marine deposits. The slopes range from 0 to 2 percent. In most years, the water table rises to a depth of less than 10 inches for 1 month to 4 months and recedes to a depth of more than 40 inches during dry periods. These soils are sandy, siliceous, hyperthermic Aeric Haplaquods.

Myakka soils are associated with Adamsville, Basinger, EauGallie, Ona, Pomello, Pompano, and Smyrna soils. Adamsville, Basinger, and Pompano soils do not have a spodic horizon. In addition, Adamsville soils are somewhat poorly drained. EauGallie soils have an argillic horizon under the spodic horizon. Ona and Smyrna soils have a shallower Bh horizon than Myakka soils. In addition, the Ona soils do not have an E horizon. Pomello soils are somewhat poorly drained.

Typical pedon of Myakka sand; 2.5 miles east of Sumter County Road 470, 1.7 miles south of Florida Highway 44, SW1/4NW1/4 sec. 8, T. 19 S., R. 22 E.

A—0 to 6 inches; black (N 2/0) sand; salt-and-pepper appearance if undisturbed; weak fine granular structure; very friable; many fine and medium roots; very strongly acid; gradual wavy boundary.

E1—6 to 12 inches; gray (10YR 5/1) sand; single grained; loose; many fine and medium roots; very strongly acid; gradual wavy boundary.

E2—12 to 25 inches; gray (10YR 7/2) fine sand; single grained; loose; common fine and few medium roots; very strongly acid; clear wavy boundary.

Bh1—25 to 31 inches; black (10YR 2/1) fine sand; weak medium subangular blocky structure; friable; common fine roots; sand grains well coated with organic matter; extremely acid; gradual wavy boundary.

Bh2—31 to 40 inches; dark brown (7.5YR 3/2) fine sand; weak medium subangular blocky structure; very friable; common fine roots; sand grains coated with organic matter; extremely acid; gradual wavy boundary.

C1—40 to 51 inches; light brownish yellow (10YR 6/4) fine sand; single grained; loose; few fine roots; very strongly acid; gradual wavy boundary.

C2—51 to 80 inches; light gray (10YR 7/2) fine sand; single grained; loose; few fine roots; very strongly acid.

The solum is 40 inches or more thick. Reaction is very strongly acid or strongly acid in the A and E horizons and ranges from extremely acid to medium acid in the Bh and C horizons.

The A horizon has hue of 10YR, value of 2 to 4, and chroma of 1 or less; or it is neutral and has value of 2.

The E horizon has hue of 10YR, value of 5 to 8, and chroma of 1 or 2. This horizon may have gray, yellow, and brown mottles. The combined thickness of the A and E horizons ranges from 20 to 30 inches. Texture is sand or fine sand.

The Bh horizon has hue of 5YR, value of 2 or 3, and chroma of 1 or 2; or hue of 7.5YR, value of 3, and chroma of 2; or hue of 10YR, value of 2, and chroma of 1 or 2. Texture is sand or fine sand.

Some pedons have a BC or Bh/BC horizon. The BC part of the Bh/BC horizon has hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 3 or 4. The Bh part has the same matrix colors as those in the Bh horizon.

The C horizon has hue of 10YR, value of 4 to 7, and chroma of 1 to 4. This horizon can have mottles of brown, yellow, or gray. Texture is sand or fine sand.

Nittaw Series

The Nittaw series consists of nearly level, very poorly drained, slowly permeable soils in hardwood swamps and on lake and river flood plains. These soils formed in thick beds of clayey marine sediment. The slopes are less than 1 percent. The water table is always at or near the surface except during extended dry periods. These soils are fine, montmorillonitic, hyperthermic Typic Argiaquolls.

Nittaw soils are associated with Floridana, Gator, Paisley, and Vero soils. Floridana soils have an argillic horizon between depths of 20 and 40 inches. Gator soils have an organic surface layer more than 16 inches thick. Paisley and Vero soils are better drained than Nittaw soils. In addition, Vero soils have a spodic horizon.

Typical pedon of Nittaw muck, frequently flooded; 1.25 miles south of Florida Highway 44, 1.47 miles west of U.S. Highway 301, NW1/4SW1/4 sec. 13, T. 19 S., R. 22 E.

Oa—0 to 5 inches; dark reddish brown (5YR 3/2) rubbed muck, 60 percent fiber, 10 percent rubbed; weak fine granular structure; very friable; many fine and medium roots; light yellowish brown sodium pyrophosphate extract (10YR 6/4); extremely acid (pH 4.4 in 0.01 molar calcium chloride); abrupt smooth boundary.

A—5 to 12 inches; very dark grayish brown (10YR 3/1) fine sand; weak fine granular structure; friable; common fine and medium roots; neutral; clear wavy boundary.

Btg1—12 to 30 inches; very dark gray (10YR 3/1) sandy clay; weak medium subangular blocky structure; sticky and plastic; few fine roots; sand grains coated and bridged with clay; neutral; gradual smooth boundary.

Btg2—30 to 55 inches; gray (5Y 5/1) clay; weak medium subangular blocky structure; very sticky and plastic;

sand grains coated and bridged with clay; neutral; gradual wavy boundary.

Btg3—55 to 65 inches; gray (5Y 6/1) sandy clay; weak medium subangular blocky structure; sticky and plastic; sand grains coated and bridged with clay; moderately alkaline; clear wavy boundary.

Cg—65 to 80 inches; light gray (2.5Y 7/2) loamy fine sand; single grained; loose; moderately alkaline.

The solum is more than 50 inches thick. Reaction in the Oa horizon is extremely acid. It is medium acid to neutral in the A horizon, neutral to mildly alkaline in the Btg horizon, and neutral to moderately alkaline in the Cg horizon.

The Oa horizon has hue of 10YR, value of 2, and chroma of 1 or 2; or hue of 5YR, value of 2 or 3, and chroma of 1 to 3.

The A horizon has hue of 10YR, value of 2 or 3, and chroma of 1; or it is neutral and has value of 2 or 3. Texture is fine sand, loamy fine sand, or fine sandy loam.

The Btg1 horizon has hue of 10YR, value of 2 or 3, and chroma of 1 or 2; or it is neutral and has value of 2 or 3. The Btg2 and Btg3 horizons have hue of 5Y, value of 5 or 6, and chroma of 1; or hue of 10YR, value of 5 or 6, and chroma of 1 or 2. The Btg horizon is sandy clay or clay.

The Cg horizon has hue of 10YR or 5Y, value of 7, and chroma of 1 or 2; or hue of 5GY, value of 4 to 6, and chroma of 1; or hue of 2.5Y, value of 7, and chroma of 2. Texture is fine sand, loamy fine sand, or fine sandy loam.

Okeelanta Series

The Okeelanta series consists of nearly level, very poorly drained, rapidly permeable soils in depressions and flooded areas. These soils formed in moderately thick deposits of plant remains underlain by sandy marine sediment. The slopes range from 0 to 1 percent. A high water table is at a depth of less than 10 inches or is above the surface 6 to 12 months during most years. These soils are sandy or sandy-skeletal, siliceous, euic, hyperthermic Terric Medisaprists.

Okeelanta soils are associated with Adamsville, Basinger, Gator, Pompano, and Terra Ceia soils. Adamsville soils are somewhat poorly drained. Basinger and Pompano soils are sandy to a depth of 80 inches. In addition, these soils are poorly drained. Gator soils have a loamy horizon within 51 inches of the surface. Terra Ceia soils have an organic horizon that extends to a depth of more than 51 inches.

Typical pedon of Okeelanta muck; 0.75 mile north of Sumter County Road 48, 1.7 miles west of U.S. Interstate 75, NE1/4NW1/4 sec. 12, T. 21 S., R. 21 E.

Oe—0 to 10 inches; black (N 2/0) rubbed and unrubbed muck (hemic material); 40 percent unrubbed fiber, 24 percent rubbed; weak medium granular structure; very friable; many fine and medium roots; neutral; clear wavy boundary.

Oa—10 to 38 inches; dark reddish brown (5YR 2/2) rubbed and unrubbed muck (sapric material); 20 percent fiber, 15 percent rubbed; weak medium granular structure; very friable; many fine roots; sodium pyrophosphate extract dark brown (10YR 4/3); neutral; clear smooth boundary.

Cg1—38 to 60 inches; grayish brown (10YR 5/2) fine sand; single grained; loose; neutral; gradual wavy boundary.

Cg2—60 to 80 inches; light gray (10YR 7/2) fine sand; single grained; loose; neutral.

Reaction ranges from slightly acid to mildly alkaline throughout.

The Oe horizon has hue of 5YR, value of 2, and chroma of 1 or 2; or it is neutral and has value of 2. The content of fiber ranges from 20 to 40 percent, unrubbed, and from 16 to 30 percent, rubbed.

The Oa horizon has the same matrix color as that in the Oe horizon. The content of fiber ranges from 10 to 30 percent, unrubbed, and from 5 to 15 percent, rubbed.

The Cg horizon has hue of 10YR, value of 5 to 7, and chroma of 1 or 2. Texture is sand, fine sand, or sandy loam in the lower part of the Cg horizon.

Oldsmar Series

The Oldsmar series consists of nearly level, poorly drained, slowly to very slowly permeable soils in broad areas of the flatwoods. Those soils formed in sandy and loamy marine sediment. The slopes range from 0 to 2 percent. During most years, the water table is at a depth of 10 to 40 inches for more than 6 months. It rises to a depth of less than 10 inches for 1 month to 3 months during wet periods and recedes to a depth of more than 40 inches during dry periods. These soils are sandy, siliceous, hyperthermic Alfic Arenic Haplaquods.

Oldsmar soils are associated with EauGallie, Electra, Floridana, Immokalee, Paisley, and Vero soils. Electra soils are better drained than Oldsmar soils. Floridana soils have a mollic epipedon and do not have a spodic horizon. Immokalee soils are sandy throughout. Paisley soils do not have a spodic horizon. They have an argillic horizon within 20 inches of the surface. EauGallie and Vero soils have a spodic horizon within 30 inches of the surface. In addition, Vero soils have an argillic horizon within 20 to 40 inches of the surface.

Typical pedon of Oldsmar fine sand, bouldery subsurface; approximately 0.4 mile south of Florida Highway 44, 1.44 miles east of Sumter County Road 470, SW1/4SW1/4 sec. 6, T. 19 S., R. 22 E.

A1—0 to 5 inches; very dark gray (10YR 3/1) fine sand; weak fine granular structure; very friable; many uncoated sand grains; many fine and medium roots; extremely acid; clear wavy boundary.

A2—5 to 9 inches; dark gray (10YR 4/1) fine sand; single grained; loose; common fine and medium roots; extremely acid; clear wavy boundary.

E1—9 to 17 inches; light brownish gray (10YR 6/2) fine sand; single grained; loose; few fine roots; very strongly acid; gradual wavy boundary.

E2—17 to 31 inches; light gray (10YR 7/2) fine sand; single grained; loose; few fine roots; very strongly acid; abrupt irregular boundary.

Bh1—31 to 38 inches; black (5YR 2/1) fine sand; weak fine subangular blocky structure; friable; few fine roots; sand grains well coated with organic matter, extremely acid; gradual wavy boundary.

Bh2—38 to 48 inches; dark reddish brown (5YR 3/2) fine sand; weak fine subangular blocky structure; very friable; few fine roots; sand grains well coated with organic matter; very strongly acid; clear wavy boundary.

Btg1—48 to 70 inches; light olive gray (5Y 6/2) sandy clay loam; common medium distinct reddish brown (5YR 4/4) mottles; weak medium subangular blocky structure; sticky and plastic; common fine dead roots; common medium distinct olive (5Y 5/3) mottles along root channels; thin clay films on ped faces; very strongly acid; gradual wavy boundary.

Btg2—70 to 80 inches; greenish gray (5GY 6/1) sandy clay loam; common medium distinct olive (5Y 5/3) mottles; weak medium subangular blocky structure; sticky and plastic; few fine distinct reddish brown (5YR 4/4) mottles along root channels; thin clay films on ped faces; strongly acid.

The solum is 80 inches or more thick. Reaction ranges from extremely acid to neutral in the A, E, and Bh horizons and from slightly acid to moderately alkaline in the Btg horizon.

The A horizon has hue of 10YR, value of 2 to 4, and chroma of 1 or 2.

The E horizon has hue of 10YR, value of 5 to 8, and chroma of 1 or 2. In some pedons, the E horizon has mottles of yellow or brown. A darker transitional horizon is at the base of the E horizon in some pedons.

The Bh horizon has hue of 5YR, 7.5YR, or 10YR, value of 2 or 3, and chroma of 1 or 2.

The Btg horizon is neutral and has value of 4 to 7; or hue of 10YR, value of 4 to 7, and chroma of 1 or 2; or hue of 5GY, value of 5 or 6, and chroma of 1; or hue of 5Y, value of 5 or 6, and chroma of 1 or 2. This horizon has mottles of gray, yellow, olive, brown, or red. Texture is fine sandy loam or sandy clay loam. A weakly expressed E' horizon is between the Bh horizon and Btg horizon in some pedons.

Ona Series

The Ona series consists of nearly level, poorly drained, moderately permeable soils on the flatwoods. These soils formed in thick, sandy marine sediment. The slopes range from 0 to 2 percent. During most years, the water table is at a depth of less than 10 inches for 1 month to 2 months and at a depth of 10 to 40 inches for 4 to 6 months. It rises to a depth of less than 10 inches for 1 month to 2 months and recedes to a depth of more than 40 inches during dry periods. These soils are sandy, siliceous, hyperthermic Typic Haplaquods.

Ona soils are associated with Basinger, EauGallie, Myakka, and Smyrna soils. Myakka and Smyrna soils have an E horizon. Basinger soils do not have a spodic horizon. EauGallie soils have an argillic horizon at a depth of more than 40 inches.

Typical pedon of Ona fine sand; 2,300 feet west of U.S. Highway 301, 1.25 miles south of Coleman Landing Road, SW1/4NE1/4 sec. 2, T. 19 S., R. 22 E.

Ap—0 to 9 inches; very dark gray (10YR 3/1) fine sand; weak fine granular structure; very friable; many uncoated sand grains; very slightly acid; clear wavy boundary.

Bh1—9 to 13 inches; very dark gray (10YR 3/1) fine sand; weak fine subangular blocky structure; very friable; many sand grains well coated with organic matter; slightly acid; clear wavy boundary.

Bh2—13 to 20 inches; dark brown (7.5YR 3/2) fine sand; weak fine subangular blocky structure; very friable; many sand grains well coated with organic matter; slightly acid; clear wavy boundary.

C1—20 to 40 inches; brown (10YR 5/3) fine sand; single grained; loose; strongly acid; gradual wavy boundary.

C2—40 to 55 inches; light yellowish brown (10YR 6/4) fine sand; single grained; loose; strongly acid; clear wavy boundary.

C3—55 to 65 inches; brown (10YR 5/3) fine sand; single grained; loose; strongly acid; gradual wavy boundary.

C4—65 to 80 inches; pale brown (10YR 6/3) fine sand; single grained; loose; strongly acid.

The solum is less than 40 inches thick. Reaction ranges from very strongly acid to medium acid except in areas where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 2 or 3, and chroma of 1.

The Bh horizon has hue of 5YR or 10YR, value of 2 or 3, and chroma of 1 or 2; or hue of 7.5YR, value of 3, and chroma of 2. Texture is fine sand or sand.

The C horizon has hue of 10YR, value of 5 to 8, and chroma of 2 to 4. Texture is fine sand or sand.

Paisley Series

The Paisley series consists of nearly level, poorly drained, slowly permeable soils on low, broad flats and small knolls. These soils formed in beds of clayey marine sediment. The slopes range from 0 to 3 percent. The water table is at a depth of 0 to 10 inches for 2 to 6 months during most years. These soils are fine, montmorillonitic, hyperthermic Typic Albaqualfs.

Paisley soils are associated with EauGallie, Ft. Green, Mabel, Sumterville, and Vero soils. EauGallie soils have a spodic horizon within 30 inches of the surface. Ft. Green, Sumterville, and Vero soils have an argillic horizon between depths of 20 and 40 inches. In addition, Sumterville soils are somewhat poorly drained, and Vero soils have a spodic horizon within 30 inches of the surface. Mabel soils are somewhat poorly drained.

Typical pedon of Paisley fine sand, bouldery subsurface; 0.3 mile north of Sumter County Road 48, 0.7 mile west of Sumter County Road 567, SE1/4SE1/4 sec. 18, T. 21 S., R. 23 E.

A—0 to 5 inches; very dark grayish brown (10YR 3/2) fine sand; weak fine granular structure; very friable; common fine and medium roots; many uncoated sand grains; medium acid; clear wavy boundary.

E—5 to 16 inches; light brownish gray (10YR 6/2) fine sand; few medium faint pale brown (10YR 6/3) mottles; single grained; loose; common medium roots; medium acid; abrupt smooth boundary.

Btg1—16 to 25 inches; gray (10YR 5/1) sandy clay; common fine distinct strong brown (7.5YR 5/8) mottles; weak fine subangular blocky structure; firm; slightly acid; gradual wavy boundary.

Btg2—25 to 45 inches; gray (10YR 6/1) clay; common fine and medium distinct strong brown (7.5YR 5/8) mottles; moderate fine subangular blocky structure; firm; medium acid; gradual wavy boundary.

Btg3—45 to 56 inches; light gray (10YR 7/1) sandy clay; common medium distinct yellowish brown (10YR 5/6) and strong brown (7.5YR 5/6) mottles; weak fine subangular blocky structure; firm; few fine soft white calcium carbonate nodules; slightly effervescent; medium acid; gradual wavy boundary.

BCg—56 to 68 inches; light gray (10YR 7/1) sandy clay; few medium distinct brownish yellow (10YR 6/6) mottles; weak fine subangular blocky structure; firm; common fine soft white calcium carbonate nodules; strongly effervescent; moderately alkaline; clear wavy boundary.

Cg—68 to 80 inches; light gray (10YR 7/1) sandy clay; many medium distinct red (2.5YR 4/8) and reddish yellow (7.5YR 7/6) mottles; massive; firm; common fine soft white calcium carbonate nodules; strongly effervescent; moderately alkaline.

The solum is 40 to 72 or more inches thick. Reaction ranges from strongly acid to slightly acid in the A and E horizons and from medium acid to moderately alkaline in the Btg and Cg horizons.

The A horizon has hue of 10YR, value of 2 to 4, and chroma of 1; or hue of 10YR, value of 3, and chroma of 2.

The E horizon has hue of 10YR, value of 5 or 6, and chroma of 1 or 2. This horizon has mottles in shades of brown and gray.

The Btg horizon has hue of 10YR, value of 5 to 7, and chroma of 1; or hue of 5Y, value of 5 or 6, and chroma of 1. This horizon has mottles in shades of brown, yellow, and red. Texture is sandy clay or clay.

The BCg horizon has hue of 10YR, value of 5 to 7, and chroma of 1; or hue of 5Y, value of 5 or 6, and chroma of 1. Texture is sandy clay or clay. White calcium carbonate nodules range from none to common in the lower part of the Btg and the BCg horizons.

The Cg horizon has the same colors and textures as those of the BCg horizon. The Cg horizon has common to many fine and medium white calcium carbonate nodules.

Placid Series

The Placid series consists of nearly level, very poorly drained, rapidly permeable soils in depressional areas and in low, poorly defined drainageways. These soils formed in sandy marine sediment. The slopes range from 0 to 2 percent. The water table is at a depth of 10 inches for about 6 months in most years. During periods of high precipitation, the water table is above the surface. These soils are sandy, siliceous, hyperthermic Typic Humaquepts.

Placid soils are associated with Basinger, Immokalee, Myakka, Pompano, and Tavares soils. Basinger and Pompano soils have a thin surface horizon. Immokalee and Myakka soils are on slightly higher ridges than Placid soils. These soils have a spodic horizon.

Typical pedon of Placid fine sand, depressional; 0.25 mile north of Little Withlacoochee River, 1.5 miles west of U.S. Highway 301, NE1/4SW1/4 sec. 14, T. 22 S., R. 21 E.

A1—0 to 10 inches; black (10YR 2/1) fine sand; weak fine granular structure; very friable; strongly acid; gradual wavy boundary.

A2—10 to 16 inches; very dark gray (10YR 3/1) fine sand; single grained; very friable; medium acid; clear wavy boundary.

Cg1—16 to 28 inches; grayish brown (10YR 5/2) fine sand; few fine faint dark gray and very dark gray mottles; single grained; loose; medium acid; gradual wavy boundary.

Cg2—28 to 80 inches; light gray (10YR 7/2) fine sand; single grained; loose; medium acid.

The solum is 10 to 22 inches or more thick. Reaction ranges from extremely acid to slightly acid throughout.

The A horizon has hue of 10YR, value of 2 or 3, and chroma of 1 or 2.

The Cg horizon has hue of 10YR, value of 5 to 7, and chroma of 1 or 2; or hue of 10YR, value of 4, and chroma of 2. Texture is fine sand or sand.

Pomello Series

The Pomello series consists of nearly level to gently sloping, somewhat poorly drained, moderately permeable soils on low ridges on the flatwoods. These soils formed in marine sand. The water table is at a depth of 24 to 42 inches for about 1 month to 4 months during wet periods. It recedes to a depth of more than 42 inches during dry periods. These soils are sandy, siliceous, hyperthermic Arenic Haplohumods.

Pomello soils are associated with Basinger, Electra, Immokalee, Myakka, Ona, Placid, and Pompano soils. Basinger, Placid, and Pompano soils do not have a spodic horizon. In addition, Basinger and Pompano soils are poorly drained, and Placid soils are very poorly drained. Electra soils have an argillic horizon. Immokalee, Myakka, and Ona soils are better drained than Pomello soils.

Typical pedon of Pomello fine sand, 0 to 5 percent slopes, 0.15 mile west of U.S. Interstate 75, 2.15 miles south of Florida Highway 44, NW1/4NE1/4 sec. 15, T. 19 S., R. 22 E.

A—0 to 6 inches; gray (10YR 6/1) fine sand; weak fine granular structure; loose; many fine and medium roots; very strongly acid; clear wavy boundary.

E—6 to 40 inches; white (10YR 8/1) fine sand; single grained; loose; few fine and coarse roots; very strongly acid; clear wavy boundary.

Bh1—40 to 48 inches; dark brown (7.5YR 3/2) fine sand; weak fine subangular blocky structure; friable; few fine roots; sand grains well coated with colloidal organic matter; very strongly acid; gradual wavy boundary.

Bh2—48 to 56 inches; black (10YR 2/1) fine sand; weak fine subangular blocky structure; friable; sand grains well coated with colloidal organic matter; very strongly acid; gradual wavy boundary.

BC—56 to 80 inches; dark brown (7.5YR 4/2) fine sand; single grained; loose; very strongly acid.

The solum is more than 70 inches thick. Reaction ranges from very strongly acid to medium acid. Texture is sand or fine sand throughout.

The A horizon has hue of 10YR, value of 4 to 7, and chroma of 1 or 2.

The E horizon has hue of 10YR, value of 7 or 8, and chroma of 1 or 2; or hue of 10YR, value of 5 or 6, and chroma of 1.

The Bh horizon has hue of 10YR, value of 2, and chroma of 1; or hue of 7.5YR, value of 3, and chroma of 2; or hue of 5YR, value of 2 or 3, and chroma of 2 or 3.

The BC horizon has hue of 7.5YR, value of 4, and chroma of 2 or 4; or hue of 10YR, value of 3 or 4, and chroma of 3.

Some pedons have a C horizon that has hue of 10YR, value of 5 to 7, and chroma of 1; or hue of 10YR, value of 6 or 7, and chroma of 3.

Pompano Series

The Pompano series consists of nearly level, poorly drained, rapidly permeable soils on the flatwoods and in poorly defined drainageways. These soils formed in thick beds of marine sand. The slopes range from 0 to 2 percent. The water table is at a depth of less than 10 inches for 2 to 6 months during most years. Depressional areas are ponded for 6 to 8 months. The water table recedes to a depth of more than 30 inches during dry periods. These soils are siliceous, hyperthermic Typic Psammaquents.

Pompano soils are associated with Adamsville, Basinger, Immokalee, Myakka, Placid, and Vero soils. Immokalee, Myakka, and Vero soils have a spodic horizon. Basinger soils have a nonspodic Bh horizon that is more than one unit darker than the overlying horizon. Adamsville soils are somewhat poorly drained. Placid soils have an umbric epipedon.

Typical pedon of Pompano fine sand; 800 feet north of Sumter County Road 470, 0.9 mile east of U.S. Interstate 75, SE1/4NE1/4 sec. 15, T. 20 S., R. 22 E.

Ap—0 to 5 inches; very dark gray (10YR 3/1) fine sand; weak fine granular structure; very friable; very slightly acid; clear wavy boundary.

A2—5 to 15 inches; dark grayish brown (2.5Y 4/2) fine sand; few fine distinct strong brown (7.5YR 5/8) mottles; single grained; loose; very slightly acid; gradual wavy boundary.

C1—15 to 35 inches; pale brown (10YR 6/3) fine sand; common medium distinct reddish brown (2.5YR 5/4) mottles; single grained; loose; medium acid; gradual wavy boundary.

C2—35 to 80 inches; light gray (10YR 7/2) fine sand; common medium distinct strong brown (7.5YR 5/6) mottles; single grained; loose; strongly acid.

Reaction ranges from very strongly acid to mildly alkaline. Texture is fine sand or sand.

The A horizon has hue of 10YR or 2.5Y, value of 2 to 5, and chroma of 1 or 2. In pedons that have value of 3.5 or less, the A horizon is less than 6 inches thick.

The C horizon has hue of 10YR, value of 5 to 8, and chroma of 1 to 3.

Seffner Series

The Seffner series consists of nearly level, somewhat poorly drained, rapidly permeable soils on low, broad flats and low knolls. These soils formed in thick, sandy marine sediment. The slopes range from 0 to 2 percent. A high water table is at a depth of 20 to 40 inches for 2 to 6 months during most years and rises to a depth of 10 to 20 inches for periods up to 2 weeks. These soils are sandy, siliceous, hyperthermic Quartzipsammentic Haplumbrepts.

Seffner soils are associated with Adamsville, Florahome, and Sparr soils. Adamsville soils have a thin surface layer. Florahome soils are moderately well drained. Sparr soils have an argillic horizon at a depth of 40 inches.

Typical pedon of Seffner fine sand; 0.9 mile north of Sumter County Road 476A, 0.3 mile west of Florida Highway 471, SE1/4NW1/4 sec. 12, T. 21 S., R. 22 E.

A—0 to 12 inches; dark brown (10YR 3/3) fine sand; single grained; loose; few fine roots; slightly acid; clear wavy boundary.

AC—12 to 18 inches; dark brown (10YR 3/3) and brown (10YR 5/3) fine sand; single grained; loose; few fine roots; medium acid; gradual wavy boundary.

C1—18 to 33 inches; brown (10YR 5/3) fine sand; few fine faint light gray mottles; single grained; loose; few fine roots; medium acid; gradual wavy boundary.

C2—33 to 55 inches; light gray (10YR 7/2) fine sand; common fine prominent brownish yellow (10YR 6/6) mottles; single grained; loose; medium acid; gradual wavy boundary.

C3—55 to 80 inches; white (10YR 8/2) fine sand; single grained; loose; medium acid.

Reaction is strongly acid or medium acid throughout except in areas where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 2 or 3, and chroma of 1 to 3. The thickness of the A horizon ranges from 10 to 20 inches.

The AC horizon has hue of 10YR, value of 3, and chroma of 3; or hue of 10YR, value of 4 or 5, and chroma of 1 to 3.

The C horizon has hue of 10YR, value of 5 to 7, and chroma of 2 or 3; or hue of 10YR, value of 8, and chroma of 2 or 3. Hue that has chroma of 2 is generally in the lower, wetter part of most pedons.

Smyrna Series

The Smyrna series consists of nearly level, poorly drained, moderately to rapidly permeable soils on the flatwoods. These soils formed in thick deposits of sandy marine material. The slopes range from 0 to 2 percent. During most years, the water table is at a depth of less than 10 inches for 1 month to 4 months and at a depth of 10 to 40 inches for more than 6 months. These soils are sandy, siliceous, hyperthermic Aeric Haplaquods.

Smyrna soils are associated with Immokalee, Myakka, Basinger, and Pompano soils. Immokalee soils have an A horizon and E horizon that total more than 30 inches thick. Myakka soils have an A horizon and E horizon that are 20 to 30 inches thick and have a solum that is more than 40 inches thick. Basinger and Pompano soils do not have a spodic horizon.

Typical pedon of Smyrna fine sand; 0.76 mile west of the Sumter-Lake County line, 1.3 miles south of Sumter County Road 470, NW1/4NW1/4 sec. 24, T. 20 S., R. 23 E.

A—0 to 3 inches; very dark gray (10YR 3/1) fine sand; weak fine granular structure; loose; strongly acid; clear wavy boundary.

E1—3 to 6 inches; light brownish gray (10YR 6/2) fine sand; single grained; loose; strongly acid; clear wavy boundary.

E2—6 to 15 inches; light gray (10YR 7/2) fine sand; single grained; loose; medium acid; abrupt smooth boundary.

Bh1—15 to 17 inches; very dark grayish brown (10YR 3/2) fine sand; weak fine subangular blocky structure; very friable; strongly acid; gradual wavy boundary.

Bh2—17 to 28 inches; dark brown (10YR 3/3) fine sand; single grained; loose; strongly acid; clear wavy boundary.

BC—28 to 36 inches; brown (7.5YR 4/4) fine sand; single grained; loose; medium acid; clear wavy boundary.

C1—36 to 50 inches; yellowish brown (10YR 5/4) fine sand; single grained; loose; medium acid; clear wavy boundary.

C2—50 to 70 inches; very pale brown (10YR 7/3) fine sand; single grained; loose; medium acid; gradual wavy boundary.

C3—70 to 80 inches; light yellowish brown (10YR 6/4) fine sand; single grained; loose; medium acid.

The solum is less than 40 inches thick. Reaction is medium acid or strongly acid throughout except in areas that have been limed or irrigated with alkaline water. Texture is sand or fine sand below the A horizon.

The A1 or Ap horizon has hue of 10YR, value of 3, and chroma of 1.

The E horizon has hue of 10YR, value of 5 to 8, and chroma of 1 or 2.

The Bh horizon has hue of 10YR, value of 2 to 3, and chroma of 1 to 3. The BC horizon has hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 3 or 4.

The C horizon has hue of 10YR, value of 5 to 7, and chroma of 3 or 4.

In some pedons, a second sequum of E' and B'h horizons is below a depth of 40 inches.

Sparr Series

The Sparr series consists of nearly level to gently sloping, somewhat poorly drained, moderately permeable soils on low ridges and knolls. These soils formed in thick beds of sandy and loamy marine sediment. The slopes range from 0 to 5 percent. During most years, the water table is at a depth of 20 to 40 inches for 1 month to 4 months and at a depth of 40 to 80 inches for 8 to 10 months. These soils are loamy, siliceous, hyperthermic Grossarenic Paleudults.

Sparr soils are associated with EauGallie, Millhopper, and Vero soils. Millhopper soils are moderately well drained. Vero and EauGallie soils have a spodic horizon. In addition, Vero soils have an argillic horizon within 40 inches of the surface.

Typical pedon of Sparr fine sand, 0 to 5 percent slopes; 2.5 miles west of U.S. Highway 301, 150 feet south of Sumter County Road 44A, NW1/4NE1/4 sec. 16, T. 19 S., R. 23 E.

A—0 to 9 inches; gray (10YR 5/1) fine sand; weak fine granular structure; very friable; few fine and medium roots; very strongly acid; clear wavy boundary.

E1—9 to 17 inches; pale brown (10YR 6/3) fine sand; common fine faint light gray and brownish yellow mottles; single grained; loose; few medium roots; strongly acid; gradual wavy boundary.

E2—17 to 29 inches; very pale brown (10YR 7/3) fine sand; few fine faint strong brown mottles; single grained; loose light gray (10YR 7/2) uncoated sand grains; strongly acid; gradual wavy boundary.

E3—29 to 45 inches; very pale brown (10YR 7/4) fine sand; common medium faint light gray (10YR 7/2) and few fine faint strong brown mottles; single grained; loose; strongly acid; clear wavy boundary.

Btg1—45 to 51 inches; light gray (10YR 7/2) fine sandy loam; common fine distinct strong brown (7.5YR 5/8) and few fine faint reddish yellow mottles; weak fine subangular blocky structure; very friable; very strongly acid; clear wavy boundary.

Btg2—51 to 71 inches; light gray (10YR 7/1) sandy clay loam; common coarse distinct reddish yellow (7.5YR 6/8) and strong brown (7.5YR 5/8) mottles; weak fine subangular blocky structure; friable; sand grains bridged with clay; very strongly acid; gradual wavy boundary.

Btg3—71 to 80 inches; light gray (10YR 7/1) sandy clay loam; few coarse distinct yellowish red (7.5YR 5/8) and red (2.5YR 4/8) mottles; weak fine subangular blocky structure; friable; sand grains bridged with clay; very strongly acid.

The solum is 60 inches or more thick. Reaction ranges from very strongly acid to slightly acid throughout.

The A or Ap horizon has hue of 10YR, value of 2 to 5, and chroma of 1 or 2.

The E1 and E2 horizons have hue of 10YR, value of 5 or 6, and chroma of 1 to 3; or hue of 10YR, value of 7, and chroma of 3 or 4. Texture is sand or fine sand.

Some pedons have an EB horizon that has hue of 10YR, value of 5, and chroma of 4 to 6; or hue of 10YR, value of 6, and chroma of 4. Mottles in shades of brown, gray, and yellow range from none to common in the E horizon. Texture is sand or fine sand.

The Btg horizon has hue of 10YR, value of 5 to 7, and chroma of 2 or less. This horizon has mottles in shades of gray, yellow, brown, and red. Texture is fine sandy loam or sandy clay loam.

Sumterville Series

The Sumterville series consists of nearly level to gently sloping, somewhat poorly drained, slowly permeable soils on broad flats and low knolls. These soils formed in thick, sandy and loamy marine sediment. The slopes range from 0 to 5 percent. The water table is at a depth of 18 to 36 inches for 2 to 4 months during most years. It rises to a depth of less than 18 inches for periods of 2 weeks and recedes to a depth of more than 60 inches during dry periods. These soils are clayey, mixed, hyperthermic Aquic Arenic Hapludalfs.

Sumterville soils are associated with Mabel, Millhopper, and Sparr soils. Mabel soils have an argillic horizon within 20 inches of the surface. Millhopper and Sparr soils have a sandy A horizon and E horizon that total more than 40 inches thick. In addition, Millhopper soils are moderately well drained.

Typical pedon of Sumterville fine sand, bouldery subsurface, 0 to 5 percent slopes; 2.5 miles east of U.S. Highway 301, 200 feet north of Sumter County Road 470, SW1/4SW1/4 sec. 9, T. 20 S., R. 23 E.

Ap—0 to 9 inches; dark gray (10YR 4/1) fine sand; weak fine granular structure; loose; many uncoated sand grains; many fine roots; very strongly acid; clear wavy boundary.

E1—9 to 24 inches; light yellowish brown (10YR 6/4) fine sand; few fine faint yellowish brown mottles; single grained; loose; few fine roots; strongly acid; clear wavy boundary.

E2—24 to 29 inches; very pale brown (10YR 7/4) fine sand; common fine faint brownish yellow (10YR 6/6, 6/8) and common fine distinct light gray (10YR 7/2) mottles; single grained; loose; few fine roots; strongly acid; abrupt wavy boundary.

Btg1—29 to 47 inches; light gray (10YR 7/1) sandy clay; common medium distinct strong brown (7.5YR 5/6) and yellowish red (5YR 4/6) mottles; weak fine subangular blocky structure; friable; thin patches of clay films on faces of peds; strongly acid; gradual wavy boundary.

Btg2—47 to 63 inches; light gray (5Y 7/1) sandy clay; few medium distinct brownish yellow (10YR 6/8) and yellowish brown (10YR 5/6) mottles; moderate medium subangular blocky structure; firm, slightly sticky; thin patches of clay films on faces of peds; strongly acid; gradual wavy boundary.

Btg3—63 to 80 inches; light gray (5Y 7/1) sandy clay; few medium faint olive yellow (2.5Y 6/6) mottles; moderate medium subangular blocky structure; firm, slightly sticky; thin patches of clay films on faces of peds; medium acid.

The solum is more than 60 inches thick. Reaction ranges from very strongly acid to slightly acid in the A and E horizons and from strongly acid to neutral in the Bt horizon.

The A horizon has hue of 10YR, value of 3 to 5, and chroma of 1 or 2.

The E horizon has hue of 10YR, value of 5 to 7, and chroma of 3 or 4. Texture is sand or fine sand. The combined thickness of the A and E horizons is 20 to 40 inches.

The Btg1 horizon has hue of 10YR, value of 5 to 7, and chroma of 2 or less; or hue of 7.5YR, value of 5 or 6, and chroma of 4. This horizon has common to many mottles in shades of gray, yellow, brown, and red. Texture is sandy clay or sandy clay loam. If the texture is sandy clay loam, it is less than 5 inches thick.

The Btg2 and Btg3 horizons have hue of 5Y, value of 6 or 7, and chroma of 2 or less; or hue of 10YR, value of 7, and chroma of 2 or less. These horizons have mottles in shades of yellow, brown, and red.

Some pedons have a C horizon that is sandy clay loam or fine sandy loam. This horizon has matrix colors similar to those in the lower part of the Btg horizon.

Tarrytown Series

The Tarrytown series consists of nearly level, somewhat poorly drained, moderately permeable soils on low, broad flats. These soils formed in loamy marine sediment. The slopes range from 0 to 2 percent. A high water table is at a depth of 12 to 24 inches for 1 month to 3 months during most years. It recedes to a depth of more than 60 inches during dry periods. These soils are fine-loamy, siliceous, hyperthermic Aquic Hapludalfs.

Tarrytown soils are associated with Adamsville, Mabel, Paisley, and Sparr soils. Adamsville soils are sandy throughout. Mabel and Paisley soils have a sandy A horizon and E horizon. These soils have a solum that is more than 20 inches thick. Sparr soils have a sandy A horizon and E horizon that combined are more than 40 inches thick.

Typical pedon of Tarrytown sandy clay loam, bouldery subsurface; 0.4 mile east of U.S. Highway 301, 0.9 mile south of Main Street, SW1/4SE1/4 sec. 36, T. 19 S., R. 22 E.

Ap—0 to 7 inches; dark grayish brown (10YR 4/2) sandy clay loam; moderate medium subangular blocky structure; very friable; common fine soft white calcium carbonate nodules; many fine roots; mildly alkaline; clear wavy boundary.

Btk1—7 to 10 inches; dark yellowish brown (10YR 4/4) sandy clay loam; common fine faint yellowish brown mottles; moderate medium subangular blocky structure; friable; common fine soft white calcium carbonate nodules; thin continuous clay skins on faces of peds; few fine roots; mildly alkaline; clear wavy boundary.

Btk2—10 to 14 inches; yellowish brown (10YR 5/4) sandy clay loam; common fine faint yellowish brown mottles; weak fine subangular blocky structure; friable; common fine soft white calcium carbonate nodules; sand grains bridged with clay; few fine roots; mildly alkaline; abrupt wavy boundary.

Ck1—14 to 22 inches; mixed light gray (10YR 7/2) and light yellowish brown (10YR 6/4) clay loam; weak fine subangular blocky structure; very friable; many fine soft white calcium carbonate nodules; common fine shell fragments; mildly alkaline; gradual wavy boundary.

Ck2—22 to 50 inches; white (10YR 8/1) loam; weak fine subangular blocky structure; very friable; many fine soft white calcium carbonate nodules; common fine shell fragments; moderately alkaline; gradual wavy boundary.

C—50 to 80 inches; mixed light gray (10YR 7/2) and brownish yellow (10YR 6/6) fine sand; single grained; loose; common fine shell fragments; strongly alkaline.

The solum is 12 to 20 inches thick. The soil is neutral to moderately alkaline throughout the solum and mildly alkaline to strongly alkaline in the C horizon. Some pedons have cobbles and boulders in the C horizon.

The A or Ap horizon has hue of 10YR, value of 3 or 4, and chroma of 2 or 3. In pedons that have value of 3, the horizon is less than 6 inches thick. Texture is fine sandy loam or sandy clay loam.

The Btk horizon has hue of 10YR, value of 4 or 5, and chroma of 4; or hue of 10YR, value of 5 or 6, and chroma of 6 or 8; or hue of 7.5YR, value of 4, and chroma of 4. Few to common mottles in shades of brown and yellow are in most pedons. The Btk horizon is fine sandy loam or sandy clay loam. Some pedons have a thin subhorizon of sandy clay.

The Ck horizon has hue of 10YR, value of 7 or 8, and chroma of 1 or 2. Few or common mottles in shades of yellow are in some pedons. Texture is fine sandy loam, loam, or clay loam.

The C horizon has hue of 10YR, value of 6 or 7, and chroma of 2 to 6. Texture is sand or fine sand.

Tavares Series

The Tavares series consists of nearly level to gently sloping, moderately well drained, very rapidly permeable soils on low ridges and knolls. These soils formed in sandy marine or eolian deposits. The slopes range from 0 to 5 percent. A high water table is at a depth of 40 to 80 inches for more than 6 months during most years but recedes to a depth of more than 80 inches during dry periods. These soils are hyperthermic, uncoated Typic Quartzipsamments.

Tavares soils are associated with Adamsville, Apopka, Astatula, Lake, Immokalee, Myakka, Placid, and Pompano soils. Adamsville soils are somewhat poorly drained. Astatula and Lake soils do not have a high water table for significant periods within 80 inches of the surface. In addition, Lake soils have 5 to 10 percent silt plus clay between depths of 10 and 40 inches. Apopka soils are well drained and have a Bt horizon at a depth of more than 40 inches. Immokalee and Myakka soils have a Bh horizon. Placid soils have an umbric epipedon. They are very poorly drained. Pompano soils are poorly drained.

Typical pedon of Tavares fine sand, 0 to 5 percent slopes; 1.5 miles north of Sumter County Road 470, 0.7 mile east of Sumter County Road 51, SE1/4SE1/4 sec. 3, T. 20 S., R. 23 E.

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) fine sand; weak fine granular structure; loose; strongly acid; clear wavy boundary.

C1—8 to 28 inches; grayish brown (10YR 5/2) fine sand; single grained; loose; medium acid; gradual wavy boundary.

C2—28 to 46 inches; pale brown (10YR 6/3) fine sand; single grained; loose; strongly acid; gradual wavy boundary.

C3—46 to 68 inches; very pale brown (10YR 7/4) fine sand; few fine faint yellow mottles; single grained; loose; medium acid; gradual wavy boundary.

C4—68 to 80 inches; white (10YR 8/2) fine sand; few fine faint yellow mottles; single grained; loose; medium acid.

Reaction is strongly acid or medium acid throughout. The content of silt and clay is less than 5 percent in the 10- to 40-inch control section.

The A horizon has hue of 10YR, value of 3 to 5, and chroma of 1 and 2.

The C1 and C2 horizons have hue of 10YR, value of 5, and chroma of 2 or 3; or hue of 10YR, value of 6, and chroma of 3 or 4. Texture is sand or fine sand.

The C3 and C4 horizons have hue of 10YR, value of 6 or 7, and chroma of 2 or 3; or hue of 10YR, value of 7, and chroma of 4; or hue of 10YR, value of 8, and chroma of 1 or 2. In some pedons, the C3 and C4 horizons have mottles in shades of brown, yellow, or red. Large splotches that have chroma of 2 or less are within 40 inches of the surface in some pedons, but these are colors of sand grains and are not interpreted as evidence of wetness. Texture is fine sand or sand.

Terra Ceia Series

The Terra Ceia series consists of nearly level, very poorly drained, rapidly permeable soils in spring-fed hardwood swamps or on lake and river flood plains. These soils formed from nonwoody, fibrous, hydrophytic plant remains. The slopes are less than 1 percent. The water table is above the surface for 6 to 8 months during most years and is at or near the surface the rest of the year except during extended dry periods. These soils are euic, hyperthermic Typic Medisaprists.

Terra Ceia soils are associated with Floridana, Gator, Okeelanta, and Placid soils. Floridana and Placid soils are mineral soils. Gator and Okeelanta soils have mineral material in the control section.

Typical pedon of Terra Ceia muck, frequently flooded; 0.35 mile east of U.S. Interstate 75, 1.2 miles north of Sumter County Road 470, SW1/4NW1/4 sec. 11, T. 20 S., R. 22 E.

Oa1—0 to 10 inches; very dark gray (10YR 3/1) unrubbed and rubbed muck, sapric material; weak fine granular structure; very friable; common fine roots, and few coarse and medium roots; about 10 percent fiber, unrubbed, less than 5 percent, rubbed; neutral in water; medium acid in calcium chloride; clear wavy boundary.

Oa2—10 to 70 inches; black (N 2/0) unrubbed and rubbed muck, sapric material; weak fine subangular blocky structure; very friable; 10 percent fiber, unrubbed, less than 5 percent, rubbed; neutral in water; medium acid in calcium chloride; gradual wavy boundary.

Oa3—70 to 80 inches; black (N 2/0) rubbed and unrubbed muck, sapric material; weak fine subangular blocky structure; very friable; 25 percent fiber, unrubbed, 5 percent fiber, rubbed; neutral in water; medium acid in calcium chloride.

The Oa horizon is more than 52 inches thick. Reaction in water is slightly acid or neutral throughout. Reaction in calcium chloride ranges from strongly acid to slightly acid.

The Oa horizon has hue of 7.5YR or 10YR, value of 2 or 3, and chroma of 1 or 2; or it is neutral and has value of 2. Sodium pyrophosphate extract is very dark grayish brown (10YR 3/2), dark grayish brown (10YR 4/2), or brown (10YR 5/3).

Vero Series

The Vero series consists of nearly level, poorly drained, slowly permeable soils on the flatwoods. These soils formed in thick deposits of sandy and loamy marine material. The slopes range from 0 to 2 percent. During most years, the water table is at a depth of less than 10 inches for 1 month to 4 months and at a depth of 10 to 40 inches for more than 6 months. These soils are sandy over loamy, siliceous, hyperthermic Alfic Haplaquods.

Vero soils are associated with EauGallie, Paisley, and Sparr soils. Paisley soils have an argillic horizon within 20 inches of the surface. EauGallie and Sparr soils have an argillic horizon at a depth of more than 40 inches. In addition, Sparr soils are somewhat poorly drained.

Typical pedon of Vero fine sand, bouldery subsurface; 100 feet south of Florida Highway 44, 50 feet west of Sumter County Road 249, SW1/4NE1/4 sec. 9, T. 19 S., R. 21 E.

A1—0 to 4 inches; black (N 2/0) fine sand; weak fine granular structure; loose; many fine and medium roots; strongly acid; clear wavy boundary.

A2—4 to 7 inches; dark gray (10YR 4/1) fine sand; single grained; loose; few fine and medium roots; very strongly acid; clear wavy boundary.

E—7 to 13 inches; light brownish gray (10YR 6/2) fine sand; single grained; loose; very strongly acid; clear wavy boundary.

EB—13 to 15 inches; dark brown (7.5YR 4/2) fine sand; single grained; loose; very strongly acid; clear wavy boundary.

Bh—15 to 21 inches; dark brown (7.5YR 2/2) loamy fine sand; weak fine subangular structure; very friable; very strongly acid; clear wavy boundary.

Btg1—21 to 30 inches; grayish brown (10YR 5/2) fine sandy loam; common coarse faint yellowish brown (10YR 5/4) and few medium distinct strong brown (7.5YR 5/8) mottles; weak fine subangular blocky structure; slightly sticky and slightly plastic; few faint clay films on faces of peds; very strongly acid; gradual wavy boundary.

Btg2—30 to 44 inches; gray (10YR 6/1) sandy clay; common medium distinct strong brown (7.5YR 5/8) and few fine distinct red (2.5YR 4/8) mottles; weak medium subangular blocky structure; slightly sticky and plastic; few faint clay films on faces of peds; very strongly acid; gradual wavy boundary.

Btg3—44 to 60 inches; light gray (10YR 7/1) sandy clay; common fine distinct yellowish brown (10YR 5/8) and few fine distinct red (2.5YR 4/8) mottles; weak fine subangular blocky structure; slightly sticky and plastic; few faint clay films on faces of peds; strongly acid; gradual wavy boundary.

Ckg—60 to 80 inches; light gray (5Y 7/1) sandy clay loam; massive; slightly sticky and plastic; many fine calcium carbonate nodules; moderately alkaline.

The solum is more than 60 inches thick. Reaction ranges from extremely acid to strongly acid in the A and E horizons, from very strongly acid to neutral in the EB and Bh horizons, and from very strongly acid to moderately alkaline in the Btg and Ckg horizons.

The A horizon is neutral and has value of 2; or has hue of 10YR, value of 3 or 4, and chroma of 1.

The E horizon has hue of 10YR, value of 5 to 7, and chroma of 1 or 2. Texture is sand or fine sand.

Some pedons have an EB horizon that has hue of 7.5YR or 10YR, value of 4, and chroma of 2 or 3; or value of 5 and chroma of 2. Texture is sand or fine sand.

The Bh horizon has hue of 7.5YR, value of 2 or 3, and chroma of 2; or hue of 5YR, value of 2, and chroma of 1 or 2; or hue of 10YR, value of 2, and chroma of 1. Texture is fine sand or loamy fine sand.

The Btg horizon has hue of 10YR, value of 5 to 7, and chroma of 1 or 2. The Btg horizon is fine sandy loam, sandy clay loam, or sandy clay. This horizon has mottles in shades of red, yellow, and brown.

The Ckg horizon has hue of 5Y, value of 6 or 7, and chroma of 1. Texture ranges from fine sandy loam to sandy clay loam.

Formation of the Soils

This section discusses the factors of soil formation, relates them to the formation of the soils in the survey area, and explains the processes of soil formation.

Factors of Soil Formation

Soil is produced by forces of weathering acting on the parent material that has been deposited or accumulated by geologic agencies. The kind of soil that forms depends on five major factors. These factors are the type of parent material, the climate under which the soil material has existed since accumulation, the plant and animal life in and on the soil, the relief, or lay of the land, and the length of time the forces of soil formation have acted on the soil material.

The five soil-forming factors are interdependent; each modifies the effect of the others. Any one of the five factors can have more influence than the others on the formation of a soil and can account for most of its properties. For example, if the parent material is quartz sand, the soil generally has weakly expressed horizons. The effect of the parent material is modified greatly in some places by the effects of climate, relief, and plants and animals in and on the soil. As a soil forms, it is influenced by one or more of the five factors, but one factor has a dominant effect in some places. A modification or variation in any of these factors results in a different kind of soil.

Parent Material

Parent material is the unconsolidated mass from which a soil is formed. It determines the limits of the chemical and mineralogical composition of the soil.

The parent material of the soils in Sumter County consists of beds of sandy and clayey materials that were transported by waters of the sea that covered the area a number of times during the Pleistocene period. During the high stands of the sea, the Mio-Pliocene sediments were eroded and redeposited or were reworked on the shallow sea bottom to form marine terraces.

The parent material in the survey area differs widely in mineral and chemical composition and in their physical constitution. The main physical differences, such as those between sand, silt, and clay, can be observed in the field. Other differences, such as mineral and chemical composition, are important to soil formation and to present physical and chemical characteristics.

Climate

The amount of precipitation, the temperature, the humidity, and the wind are the climatic forces that act on the parent material of soils. These forces also cause some variation in the plant and animal life on and in the soils. In this way, the influence changes in the parent material and, consequently, soil development.

This area has a warm, humid climate. The Gulf of Mexico and the numerous inland lakes have a moderating effect on summer and winter temperatures. Summer temperatures are fairly uniform from year to year and show little day-to-day variation. Winter temperatures, however, display considerable day-to-day variation. Rainfall averages about 55 inches a year.

Because of the warm climate and abundance of rainfall, chemical and biological actions are rapid. The abundance of rainfall leaches the soils of most plant nutrients.

Plants and Animals

Plants have been the principal biological factors in the formation of soils in the survey area. Animals, insects, bacteria, and fungi have also been important to the chief functions of the plant and animal life or to furnish organic matter and to bring plant nutrients from the lower layers to the upper layers of the soil. In places, plants and animals cause differences in the amount of organic matter, nitrogen, and plant nutrients in the soils and differences in soil structure and porosity.

Relief

Relief has affected the formation of soils in Sumter County mainly through its influence on soil-water relationships and its affect on erosion. Other factors of soil formation generally associated with relief, such as temperature and plant cover, are of minor importance.

Three general areas—flatwoods, swamps, and ridges—are in the county. Differences in the soils in these general areas are directly related to relief.

The soils in the flatwoods have a high water table and a surface layer that is periodically wet. These soils, therefore, are not so highly leached as those on the central ridges. The soils in the swamps are covered with water for long periods; and in many places, they have a high content of organic material on the surface layer. The soils on the ridges are at a higher elevation than those in the flatwoods and swamps. The deep, sandy soils mostly are excessively drained and are not influenced by ground water. Many of the clayey and loamy soils are influenced by ground water. These soils are more subject to erosion than soils in other parts of the county.

Time

Time is an important factor in soil formation. The physical and chemical changes brought about by climate, living organisms, and relief are slow. The length of time needed to convert raw geologic material into soil varies according to the nature of the geological material and the interaction of the other factors. Some basic minerals from which soils are formed weather fairly rapidly; other minerals are chemically inert and show little change over long periods. The translocation of fine particles in the soil to form the various horizons is variable under different conditions, but the processes always take a relatively long time.

In Sumter County, the dominant geological materials are inactive. The sands are almost pure quartz and are highly resistant to weathering. The finer textured silts and clays are the product of earlier weathering.

In terms of geological time, relatively little time has elapsed since the material in which the soils in the county have developed was laid down or emerged from the sea. The loamy and clayey horizons formed in place through processes of clay translocation.

Processes of Soil Formation

Soil morphology refers to the process involved in the formation of the soil horizon or soil horizon differentiation. The differentiation of horizons in soils in Sumter County is the result of accumulation of organic matter, leaching of carbonates, reduction and transfer of iron, or accumulation of silicate clay minerals. Sometimes more than one of these processes are involved.

Some organic matter has accumulated in the upper layers of most of the soils to form an A horizon. The quantity of organic matter is small in some of the soils, but fairly large in others. Carbonates and salts have been leached in nearly all of the soils. The effects of leaching have been indirect because the leaching permitted the subsequent translocation of silicate clay-materials in some soils. Most of the soils in the county are leached to varying degrees.

Reduction in transfer of iron is evident in most of the soils in the county except the organic soils. In some of the wet soils, iron has been segregated in the lower horizons to form reddish brown mottles and concretions. In the Kendrick soil, evidence of wetting and clay movement, or alteration, is present in the form of a light, leached E horizon and a loamy Bt horizon that has sand grains coated and bridged with clay material.

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Glossary

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well-aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Association, soil. A group of soils geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as—

	Inches of water per inch of soil
Very low	less than 0.05
Low	0.05 to 0.10
Moderate	0.10 to 0.15
High	0.15 to 0.20
Very high	more than 0.20

The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as—

	Inches
Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	9 to 12
Very high	more than 12

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, K), expressed as a percentage of the total cation-exchange capacity.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Boulders. Rock fragments larger than 2 feet (60 centimeters) in diameter.

Calcareous soil. A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.

Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity, but is more precise in meaning.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels, i.e., clay coatings, clay skins.

Climax vegetation. The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.

Coarse fragments. If round, mineral or rock particles 2 millimeters to 25 centimeters (10 inches) in diameter; if flat, mineral or rock particles (flagstone) 15 to 38 centimeters (6 to 15 inches) long.

Coarse textured soil. Sand or loamy sand.

Cobblestone (or cobble). A rounded or partly rounded fragment of rock 3 to 10 inches (7.5 to 25 centimeters) in diameter.

Complex slope. Irregular or variable slope. Planning or constructing terraces, diversions, and other water-control measures on a complex slope is difficult.

Complex, soil. A map unit of two or more kinds of soil in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils are somewhat similar in all areas.

Compressible (in tables). The volume of soft soil decreases excessively under load.

Concretions. Grains, pellets, or nodules of various sizes, shapes, and colors consisting of concentrated compounds or cemented soil grains. The composition of most concretions is unlike that of the surrounding soil. Calcium carbonate and iron oxide are common compounds in concretions.

Consistence, soil. The feel of the soil and the ease with which a lump can be crushed by the fingers. Terms commonly used to describe consistence are—

Loose.—Noncoherent when dry or moist; does not hold together in a mass.

Friable.—When moist, crushes easily under gentle pressure between thumb and forefinger and can be pressed together into a lump.

Firm.—When moist, crushes under moderate pressure between thumb and forefinger, but resistance is distinctly noticeable.

Plastic.—When wet, readily deformed by moderate pressure but can be pressed into a lump; will form a wire" when rolled between thumb and forefinger.

Sticky.—When wet, adheres to other material and tends to stretch somewhat and pull apart rather than to pull free from other material.

Hard.—When dry, moderately resistant to pressure; can be broken with difficulty between thumb and forefinger.

Soft.—When dry, breaks into powder or individual grains under very slight pressure.

Cemented.—Hard; little affected by moistening.

Contour stripcropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Corrosive. High risk of corrosion to uncoated steel or deterioration of concrete.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Decreasers. The most heavily grazed climax range plants. Because they are the most palatable, they are the first to be destroyed by overgrazing.

Deferred grazing. Postponing grazing or resting grazingland for a prescribed period.

Depth to rock (in tables). Bedrock is too near the surface for the specified use.

Drainage class (natural). Refers to the frequency and duration of periods of saturation or partial saturation during soil formation, as opposed to altered drainage, which is commonly the result of artificial drainage or irrigation but may be caused by the sudden deepening of channels or the blocking of drainage outlets. Seven classes of natural soil drainage are recognized:

Excessively drained.—Water is removed from the soil very rapidly. Excessively drained soils are commonly very coarse textured, rocky, or shallow. Some are steep. All are free of the mottling related to wetness.

Well drained.—Water is removed from the soil readily, but not rapidly. It is available to plants throughout most of the growing season, and wetness does not inhibit growth of roots for significant periods during most growing seasons. Well drained soils are commonly medium textured. They are mainly free of mottling.

Moderately well drained.—Water is removed from the soil somewhat slowly during some periods. Moderately well drained soils are wet for only a short time during the growing season, but periodically they are wet long enough that most mesophytic crops are affected. They commonly have a slowly pervious layer within or directly below the solum, or periodically receive high rainfall, or both.

Somewhat poorly drained.—Water is removed slowly enough that the soil is wet for significant periods during the growing season. Wetness markedly restricts the growth of mesophytic crops unless artificial drainage is provided. Somewhat poorly drained soils commonly have a slowly pervious layer, a high water table, additional water from seepage, nearly continuous rainfall, or a combination of these.

Poorly drained.—Water is removed so slowly that the soil is saturated periodically during the growing season or remains wet for long periods. Free water is commonly at or near the surface for long enough during the growing season that most mesophytic crops cannot be grown unless the soil is artificially drained. The soil is not continuously saturated in layers directly below plow depth. Poor drainage results from a high water table, a slowly pervious layer within the profile, seepage, nearly continuous rainfall, or a combination of these.

Very poorly drained.—Water is removed from the soil so slowly that free water remains at or on the surface during most of the growing season. Unless the soil is artificially drained, most mesophytic crops cannot be grown. Very poorly drained soils are commonly level or depressed and are frequently ponded. Yet, where rainfall is high and nearly continuous, they can have moderate or high slope gradients.

Drainage, surface. Runoff, or surface flow of water, from an area.

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of the activities of man or other animals or of a catastrophe in nature, such as fire, that exposes the surface.

Excess fines (in tables). Excess silt and clay are in the soil. The soil is not a source of gravel or sand for construction purposes.

Fast intake (in tables). The movement of water into the soil is rapid.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Fibric soil material (peat). The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity*, *normal moisture capacity*, or *capillary capacity*.

Fine textured soil. Sandy clay, silty clay, and clay.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Flooding. The temporary inundation of an area is caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, nor is water in swamps and marshes.

Foot slope. The inclined surface at the base of a hill.

Forb. Any herbaceous plant that is not a grass or a sedge.

Fragile (in tables). The soil is easily damaged by use or disturbance.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors and mottles.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Green-manure crop (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

Ground water (geology). Water filling all the unblocked pores of underlying material below the water table.

Hardpan. A hardened or cemented soil horizon, or layer. The soil material is sandy, loamy, or clayey and is cemented by iron oxide, silica, calcium carbonate, or other substance.

Hemic soil material (mucky peat). Organic soil material intermediate in degree of decomposition between the less decomposed fibric and the more decomposed sapric material.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an upper case letter represents the major horizons. Numbers or lower case letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the *Soil Survey Manual*. The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue at the surface of a mineral soil.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.—The mineral horizon below an O, A, or E horizon. The B horizon is, in part, a layer of transition from the overlying horizon to the underlying C horizon. The B horizon also has distinctive characteristics, such as accumulation of clay, sesquioxides, humus, or a combination of these; prismatic or blocky structure; redder or browner colors than those in the A horizon; or a combination of these. The combined A and B horizons are generally called the solum, or true soil. If a soil does not have a B horizon, the A horizon alone is the solum.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the A or B horizon. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, the Arabic numeral 2 precedes the letter C.

R layer.—Consolidated rock (unweathered bedrock) beneath the soil. The rock commonly underlies a C horizon, but can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff-producing characteristics. The chief consideration is the inherent capacity of soil bare of vegetation to permit infiltration. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff. Soils are assigned to four groups. In group A are soils having a high infiltration rate when thoroughly wet and having a low runoff potential. They are mainly deep, well drained, and sandy or gravelly. In group D, at the other extreme, are soils having a very slow infiltration rate and thus a high runoff potential. They have a claypan or clay layer at or near the surface, have a permanent high water table, or are shallow over nearly impervious bedrock or other material. A soil is assigned to two hydrologic groups if part of the acreage is artificially drained and part is undrained.

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Increasers. Species in the climax vegetation that increase in amount as the more desirable plants are reduced by close grazing. Increasers commonly are the shorter plants and the plants that are the less palatable to livestock.

Infiltration. The downward entry of water into the immediate surface of soil or other material. This contrasts with percolation, which is movement of water through soil layers or material.

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake in inches per hour is expressed as follows:

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

Invaders. On range, plants that encroach into an area and grow after the climax vegetation has been reduced by grazing. Generally, invader plants follow disturbance of the surface.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are—

Border.—Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes, or borders.

Basin.—Water is applied rapidly to nearly level plains surrounded by levees or dikes.

Controlled flooding.—Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

Drip (or trickle).—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Furrow.—Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.

Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Subirrigation.—Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

Large stones (in tables). Rock fragments that are 3 inches (7.5 centimeters) or more across. Large stones adversely affect the specified use of the soil.

Leaching. The removal of soluble material from soil or other material by percolating water.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Low strength. The soil is not strong enough to support loads.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation.

Moderately coarse textured soil. Sandy loam and fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, and silty clay loam.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Mottling generally indicates poor aeration and impeded drainage. Descriptive terms are as follows: abundance—*few, common,* and *many*; size—*fine, medium,* and *coarse*; and contrast—*faint, distinct,* and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium*, from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse*, more than 15 millimeters (about 0.6 inch).

Muck. Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

Munsell notation. A designation of color by degrees of the three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color of 10YR hue, value of 6, and chroma of 4.

Neutral soil. A soil having a pH value between 6.6 and 7.3. (See Reaction, soil.)

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Organic matter. Plant and animal residue in the soil in various stages of decomposition.

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan, fragipan, claypan, plowpan,* and *traffic pan*.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Peat. Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedon. The smallest volume that can be called a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The downward movement of water through the soil.

Percs slowly (in tables). The slow movement of water through the soil adversely affects the specified use.

Permeability. The quality of the soil that enables water to move through the profile. Permeability is measured as the number of inches per hour that water moves through the saturated soil. Terms describing permeability are:

Very slow	less than 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

Phase, soil. A subdivision of a soil series based on features that affect its use and management. For example, slope, stoniness, and thickness.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Piping (in tables). Subsurface tunnels or pipelike cavities are formed by water moving through the soil.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Poor filter (in tables). Because of rapid permeability, the soil may not adequately filter effluent from a waste disposal system.

Poor outlets (in tables). In these areas, surface or subsurface drainage outlets are difficult or expensive to install.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Rangeland. Land on which the potential natural vegetation is predominantly grasses, grasslike plants, forbs, or shrubs suitable for grazing or browsing. It includes natural grasslands, savannas, many wetlands, some deserts, tundras, and areas that support certain forb and shrub communities.

Range condition. The present composition of the plant community on a range site in relation to the potential natural plant community for that site. Range condition is expressed as excellent, good, fair, or poor, on the basis of how much the present plant community has departed from the potential.

Range site. An area of rangeland where climate, soil, and relief are sufficiently uniform to produce a distinct natural plant community. A range site is the product of all the environmental factors responsible for its development. It is typified by an association of species that differ from those on other range sites in kind or proportion of species or total production.

Reaction, soil. A measure of the acidity or alkalinity of a soil expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degree of acidity or alkalinity is expressed as—

	pH
Extremely acid	below 4.5
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Medium acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Mildly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Regolith. The unconsolidated mantle of weathered rock and soil material on the earth's surface; the loose earth material above the solid rock.

Relief. The elevations or inequalities of a land surface, considered collectively.

Rippable. Rippable bedrock or hardpan can be excavated using a single-tooth ripping attachment mounted on a tractor with a 200-300 draw bar horsepower rating.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Rooting depth (in tables). There is a shallow root zone. The soil is shallow over a layer that greatly restricts roots.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sapric soil material (muck). The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

Seepage (in tables). The movement of water through the soil adversely affects the specified use.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer or of the underlying material. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shrink-swell. The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

Silica-sesquioxide ratio. The ratio of the number of molecules of silica to the number of molecules of alumina and iron oxide. The more highly weathered soils or their clay fractions in warm-temperate, humid regions, and especially those in the tropics, generally have a low ratio.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Sinkhole. A depression in the landscape where limestone has been dissolved.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75 feet.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance.

Slope (in tables). Slope is great enough that special practices are required to ensure satisfactory performance of the soil for a specific use.

Slow intake (in tables). The slow movement of water into the soil.

Slow refill (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

Small stones (in tables). Rock fragments less than 3 inches (7.5 centimeters) in diameter. Small stones adversely affect the specified use of the soil.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes of separates recognized in the United States are as follows:

	Millimeters
Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the underlying material. The living roots and plant and animal activities are largely confined to the solum.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Stubble mulch. Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Breaking up a compact subsoil by pulling a special chisel through the soil.

Substratum. The part of the soil below the solum.

Subsurface layer. Technically, the A2 horizon. Generally refers to a leached horizon lighter in color and lower in organic matter content than the overlying surface layer.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the plow layer," or the Ap horizon."

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior.

Terrace. An embankment, or ridge, constructed on the contour or at a slight angle to the contour across sloping soils. The terrace intercepts surface runoff, so that water soaks into the soil or flows slowly to a prepared outlet.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying coarse," fine," or very fine."

Thin layer (in tables). Otherwise suitable soil material is too thin for the specified use.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toe slope. The outermost inclined surface at the base of a hill; part of a foot slope.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Trace elements. Chemical elements, such as zinc, cobalt, manganese, copper, and iron, are in soils in extremely small amounts. They are essential to plant growth.

Unstable fill (in tables). There is a risk of caving or sloughing on banks of fill material.

Upland (geology). Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Variegation. Refers to patterns of contrasting colors that are assumed to be inherited from the parent material rather than to be the result of poor drainage.

Weathering. All physical and chemical changes produced by atmospheric agents in rocks or other deposits at or near the earth's surface. These changes result in disintegration and decomposition of the material.

Well graded. Refers to soil material consisting of course grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. This contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an ovendry basis, at which a plant (specifically sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Tables

TABLE 1.--TEMPERATURE AND PRECIPITATION

Month	Temperature*	Precipitation**		
	Monthly normal mean	Normal total	Maximum total	Minimum total
	°F	In	In	In
January	59.4	2.45	6.46	.03
February	60.7	3.25	6.90	.32
March	65.0	4.00	14.38	.04
April	70.1	2.82	6.85	.00
May	75.7	3.83	11.49	.20
June	79.6	7.35	16.85	1.48
July	81.0	8.42	18.18	3.29
August	81.0	7.26	15.30	3.20
September	79.4	6.35	16.88	1.04
October	72.9	3.01	8.77	.00
November	64.4	1.71	7.63	.03
December	60.0	2.15	6.55	.15
Year	70.8	52.60		

* 1949-1976
** 1937-1976

TABLE 2.--FREEZE DATES IN SPRING AND FALL

(Based on data recorded in the period 1941 through 1970 at Bushnell, Florida)

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	February 20	March 16	March 31
2 years in 10 later than--	February 4	February 25	March 14
5 years in 10 later than--	January 11	February 3	February 23
First freezing temperature in fall:			
1 year in 10 earlier than--	December 6	November 20	November 7
2 years in 10 earlier than--	December 24	December 6	November 21
5 years in 10 earlier than--	January 16	December 24	December 6

TABLE 3.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS

Map symbol	Soil name	Acres	Percent
1	Arredondo fine sand, 0 to 5 percent slopes	2,060	0.6
3	Astatula fine sand, rolling	980	0.3
4	Candler sand, 0 to 5 percent slopes	21,273	5.9
5	Candler sand, 5 to 8 percent slopes	2,210	0.6
6	Kendrick fine sand, 0 to 5 percent slopes	1,310	0.4
8	Lake fine sand, 0 to 5 percent slopes	6,000	1.7
9	Paisley fine sand, bouldery subsurface	18,541	5.2
10	Sparr fine sand, 0 to 5 percent slopes	4,721	1.3
11	Millhopper sand, 0 to 5 percent slopes	6,595	1.8
13	Tavares fine sand, 0 to 5 percent slopes	11,127	3.1
14	Lake fine sand, 5 to 8 percent slopes	310	0.1
15	Adamsville fine sand, bouldery subsurface	7,104	2.0
16	Apopka fine sand, 0 to 5 percent slopes	2,170	0.6
17	Sumterville-Mabel-Tavares association, bouldery subsurface, 0 to 5 percent slopes	475	0.1
18	Okeelanta muck	4,911	1.4
19	Apopka fine sand, 5 to 8 percent slopes	995	0.3
20	Florahome sand, 0 to 5 percent slopes	1,414	0.4
21	EauGallie fine sand, bouldery subsurface	20,852	5.8
22	Smyrna fine sand	2,307	0.7
23	Ona fine sand	9,960	2.8
24	Basinger fine sand	564	0.2
25	Kanapaha sand, bouldery subsurface	8,632	2.4
26	Vero fine sand, bouldery subsurface	16,050	4.5
27	Sumterville fine sand, bouldery subsurface, 0 to 5 percent slopes	6,869	1.9
28	Seffner fine sand	7,545	2.1
29	Nittaw muck, frequently flooded	7,561	2.1
30	Placid fine sand, depressional	7,734	2.2
31	Myakka sand	6,749	1.9
32	Pompano fine sand	3,493	1.0
33	Sparr fine sand, bouldery subsurface, 0 to 5 percent slopes	21,592	6.0
34	Tarrytown sandy clay loam, bouldery subsurface	1,000	0.3
35	Pompano fine sand, depressional	1,275	0.4
36	Floridana mucky fine sand, depressional	13,949	3.9
37	Astatula fine sand, 0 to 8 percent slopes	6,109	1.7
39	Mabel fine sand, bouldery subsurface, 0 to 5 percent slopes	2,944	0.8
40	Millhopper sand, bouldery subsurface, 0 to 5 percent slopes	8,580	2.4
41	Everglades muck, frequently flooded	3,992	1.1
42	Adamsville fine sand	4,486	1.2
43	Basinger fine sand, depressional	3,382	0.9
44	Oldsmar fine sand, bouldery subsurface	3,518	1.0
45	Electra fine sand, bouldery subsurface	685	0.2
46	Ft. Green fine sand, bouldery subsurface	12,306	3.4
47	Okeelanta muck, frequently flooded	6,575	1.8
48	Malabar fine sand, frequently flooded	1,075	0.3
49	Terra Ceia muck, frequently flooded	5,643	1.6
50	Immokalee sand	3,020	0.8
51	Pits-Dumps complex	2,251	0.6
52	Candler sand, 8 to 12 percent slopes	460	0.1
53	Tavares fine sand, bouldery subsurface, 0 to 5 percent slopes	2,660	0.7
54	Monteocha fine sand, depressional	4,192	1.2
55	Pomello fine sand, 0 to 5 percent slopes	755	0.2
56	Vero fine sand, depressional	1,245	0.3
57	Gator muck, frequently flooded	10,458	2.9
58	Paisley fine sand, depressional	1,118	0.3
59	Arents, organic substratum	75	*
60	Delray fine sand, depressional	11,550	3.2
61	EauGallie fine sand	14,851	4.1
62	Urban land	465	0.1
63	Floridana-Basinger association, frequently flooded	3,685	1.0
64	Gator muck	1,827	0.5
65	Candler sand, bouldery subsurface, 0 to 5 percent slopes	3,553	1.0
66	Arredondo fine sand, bouldery subsurface, 0 to 5 percent slopes	2,915	0.8
67	Vero fine sand	2,903	0.8

See footnote at end of table.

TABLE 3.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS--Continued

Map symbol	Soil name	Acres	Percent
68	Chobee loamy fine sand, frequently flooded	1,025	0.3
	Water <40acres in size	2,544	0.7
	Total	359,175	100.0

* Less than 0.1 percent.

TABLE 4.--LAND CAPABILITY CLASSES AND YIELDS PER ACRE OF CROPS AND PASTURE

[Yields are those that can be expected under a high level of management. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil]

Map symbol and soil name	Land capability	Watermelons	Tomatoes	Cucumbers	Bell peppers	Squash	Bahiagrass	Sorghum silage
		Tons	Tons	Tons	Bu	Bu	AUM*	Tons
1--------------- Arredondo	IIIs	15	16	---	---	---	8.0	10
3--------------- Astatula	VIIs	---	---	---	---	---	3.0	---
4--------------- Candler	IVs	12	10	---	---	---	6.0	8
5--------------- Candler	VIs	---	---	---	---	---	6.0	8
6--------------- Kendrick	IIe	15	10	---	---	---	10.0	10
8--------------- Lake	IVs	15	12	---	---	---	6.0	10
9--------------- Paisley	IIIw	---	---	11	600	200	10.0	10
10-------------- Sparr	IIIw	10	10	8	600	150	9.0	9
11-------------- Millhopper	IIIs	15	17	8	700	150	8.5	10
13-------------- Tavares	IIIs	10	12	8	600	150	8.0	10
14-------------- Lake	VIs	10	10	---	---	---	6.0	9
15-------------- Adamsville	IIIw	9	7	11	600	150	7.0	8
16-------------- Apopka	IIIs	12	12	---	---	---	8.0	10
17:								
Sumterville----	IIw	10	9	---	---	---	9.0	---
Mabel----------	IIIw	10	9	---	---	---	9.0	---
Tavares--------	IIIs	10	12	---	---	---	8.0	---
18-------------- Okeelanta	VIIw	---	---	---	---	---	---	---
19-------------- Apopka	IVs	12	10	---	---	---	7.5	10
20-------------- Florahome	IIIs	10	12	13	700	200	7.0	10
21-------------- EauGallie	IVw	10	8	8	400	150	8.0	10

See footnote at end of table.

TABLE 4.--LAND CAPABILITY CLASSES AND YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Map symbol and soil name	Land capability	Watermelons	Tomatoes	Cucumbers	Bell peppers	Squash	Bahiagrass	Sorghum silage
		Tons	Tons	Tons	Bu	Bu	AUM*	Tons
22-------------- Smyrna	IVw	10	8	8	400	300	8.0	10
23-------------- Ona	IIIw	10	12	8	600	500	8.5	10
24-------------- Basinger	IVw	---	13	5	400	200	8.0	8
25-------------- Kanapaha	IIIw	8	8	7	500	500	9.0	8
26-------------- Vero	IIIw	10	13	5	300	500	7.0	10
27-------------- Sumterville	IIw	10	9	---	---	---	9.0	10
28-------------- Seffner	IIIw	10	12	13	600	200	7.0	10
29-------------- Nittaw	Vw	---	---	---	---	---	---	---
30-------------- Placid	VIIw	---	---	---	---	---	---	---
31-------------- Myakka	IVw	10	8	8	400	200	8.0	8
32-------------- Pompano	IVw	---	13	5	400	200	8.0	8
33-------------- Sparr	IIIs	10	15	8	700	150	7.0	10
34-------------- Tarrytown	IIw	---	10	12	800	200	10.0	15
35-------------- Pompano	VIIw	---	---	---	---	---	---	---
36-------------- Floridana	VIIw	---	---	---	---	---	---	---
37-------------- Astatula	VIs	---	---	---	---	---	3.0	7
39-------------- Mabel	IIIw	10	9	---	500	---	9.0	10
40-------------- Millhopper	IIIs	15	16	8	700	150	8.5	10
41-------------- Everglades	VIIw	---	---	---	---	---	---	---
42-------------- Adamsville	IIIw	9	7	11	600	150	7.0	8

See footnote at end of table.

TABLE 4.--LAND CAPABILITY CLASSES AND YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Map symbol and soil name	Land capability	Watermelons	Tomatoes	Cucumbers	Bell peppers	Squash	Bahiagrass	Sorghum silage
		Tons	Tons	Tons	Bu	Bu	AUM*	Tons
43-------------- Basinger	VIIw	---	---	---	---	---	---	---
44-------------- Oldsmar	IVw	---	8	8	600	150	8.0	8
45-------------- Electra	VIs	---	---	---	---	---	6.0	8
46-------------- Ft. Green	IIIw	---	12	10	600	200	8.0	10
47-------------- Okeelanta	VIIw	---	---	---	---	---	---	---
48-------------- Malabar	VIw	---	---	---	---	---	---	---
49-------------- Terra Ceia	VIIw	---	---	---	---	---	---	---
50-------------- Immokalee	IVw	---	8	8	600	150	8.0	8
51. Pits-Dumps								
52-------------- Candler	VIs	---	---	---	---	---	6.5	7
53-------------- Tavares	IIIs	10	12	8	600	150	8.0	10
54-------------- Monteocha	VIIw	---	---	---	---	---	---	---
55-------------- Pomello	VIs	---	---	---	---	---	6.0	8
56-------------- Vero	VIIw	---	---	---	---	---	---	---
57-------------- Gator	VIIw	---	---	---	---	---	---	---
58-------------- Paisley	VIIw	---	---	---	---	---	---	---
59. Arents								
60-------------- Delray	VIIw	---	---	---	---	---	---	---
61-------------- EauGallie	IVw	---	8	8	400	150	8.0	10
62. Urban land								

See footnote at end of table.

TABLE 4.--LAND CAPABILITY CLASSES AND YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Map symbol and soil name	Land capability	Watermelons	Tomatoes	Cucumbers	Bell peppers	Squash	Bahiagrass	Sorghum silage
		Tons	Tons	Tons	Bu	Bu	AUM*	Tons
63.								
Floridana------	Vw	---	---	---	---	---	---	---
Basinger--------	VIw	---	---	---	---	---	---	---
64-------------- Gator	VIIw	---	---	---	---	---	---	---
65-------------- Candler	IVs	12	10	---	---	---	6.0	8
66-------------- Arredondo	IIIs	15	16	---	800	---	8.0	10
67-------------- Vero	IIIw	10	13	5	300	500	8.0	10
68------------- Chobee	Vw	---	---	---	---	---	---	---

* Animal-unit-month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

TABLE 5.--CAPABILITY CLASSES AND SUBCLASSES

(Miscellaneous areas are excluded. Absence of an entry indicates no acreage)

Class	Total acreage	Major management concerns (Subclass)			
		Erosion (e)	Wetness (w)	Soil problem (s)	Climate (c)
		Acres	Acres	Acres	Acres
I	---	---	---	---	---
II	9,459	1,310	8,149	---	---
III	154,504	---	95,306	59,198	---
IV	87,175	---	55,354	31,821	---
V	11,386	---	11,386	---	---
VI	12,488	---	1,959	10,529	---
VII	78,831	---	77,851	980	---
VIII	---	---	---	---	---

TABLE 6.--RANGELAND PRODUCTIVITY

[Only the soils that support rangeland vegetation suitable for grazing are listed]

Map symbol and soil name	Range site	Potential annual production for kind of growing season		
		Favorable Lb/acre	Average Lb/acre	Unfavorable Lb/acre
1----------------------- Arredondo	Longleaf Pine-Turkey Oak Hills	4,000	3,000	2,000
3----------------------- Astatula	Sand Pine Scrub	3,500	2,000	1,500
4----------------------- Candler	Longleaf Pine-Turkey Oak Hills	4,000	3,000	2,000
5----------------------- Candler	Longleaf Pine-Turkey Oak Hills	4,000	3,000	2,000
6----------------------- Kendrick	Longleaf Pine-Turkey Oak Hills	4,000	3,000	2,000
8----------------------- Lake	Longleaf Pine-Turkey Oak Hills	4,000	3,000	2,000
9----------------------- Paisley	Oak Hammock	3,500	2,500	2,000
10---------------------- Sparr	Oak Hammock	3,500	2,500	2,000
11---------------------- Millhopper	Oak Hammock	3,500	2,500	2,000
13---------------------- Tavares	Longleaf Pine-Turkey Oak Hills	4,000	3,000	2,000
14---------------------- Lake	Longleaf Pine-Turkey Oak Hills	4,000	3,000	2,000
15---------------------- Adamsville	Oak Hammock	3,500	2,500	2,000
16---------------------- Apopka	Longleaf Pine-Turkey Oak Hills	4,000	3,000	2,000
17:				
Sumterville--------------	Oak Hammock	3,500	2,500	2,000
Mabel--------------------	Upland Hardwood Hammock	4,500	3,000	2,000
Tavares------------------	Longleaf Pine-Turkey Oak Hills	4,000	3,000	2,000
18---------------------- Okeelanta	Freshwater Marshes and Ponds	10,000	7,500	5,000
19---------------------- Apopka	Longleaf Pine-Turkey Oak Hills	4,000	3,000	2,000
20---------------------- Florahome	Oak Hammock	3,500	2,500	2,000
21---------------------- EauGallie	South Florida Flatwoods	6,000	4,500	3,000
22---------------------- Smyrna	South Florida Flatwoods	6,000	4,500	3,000

TABLE 6.--RANGELAND PRODUCTIVITY--Continued

Map symbol and soil name	Range site	Potential annual production for kind of growing season		
		Favorable Lb/acre	Average Lb/acre	Unfavorable Lb/acre
23----------------------- Ona	South Florida Flatwoods	6,000	4,500	3,000
24----------------------- Basinger	Slough	8,000	6,000	4,000
25----------------------- Kanapaha	Oak Hammock	3,500	2,500	2,000
26----------------------- Vero	South Florida Flatwoods	6,000	4,500	3,000
27----------------------- Sumterville	Oak Hammock	3,500	2,500	2,000
28----------------------- Seffner	Oak Hammock	3,500	2,500	2,000
30----------------------- Placid	Freshwater Marshes and Ponds	10,000	7,500	5,000
31----------------------- Myakka	South Florida Flatwoods	6,000	4,500	3,000
32----------------------- Pompano	Slough	8,000	6,000	4,000
33----------------------- Sparr	Oak Hammock	3,500	2,500	2,000
34----------------------- Tarrytown	Oak Hammock	3,500	2,500	2,000
35----------------------- Pompano	Freshwater Marshes and Ponds	10,000	7,500	5,000
36----------------------- Floridana	Freshwater Marshes and Ponds	10,000	7,500	5,000
37----------------------- Astatula	Sand Pine Scrub	3,500	2,000	1,500
39----------------------- Mabel	Upland Hardwood Hammock	4,500	3,500	3,000
40----------------------- Millhopper	Oak Hammock	3,500	2,500	2,000
42----------------------- Adamsville	Oak Hammock	3,500	2,500	2,000
43----------------------- Basinger	Freshwater Marshes and Ponds	10,000	7,500	5,000
44----------------------- Oldsmar	South Florida Flatwoods	6,000	4,500	3,000
45----------------------- Electra	South Florida Flatwoods	6,000	4,500	3,000
46----------------------- Ft. Green	Oak Hammock	3,500	2,500	2,000

TABLE 6.--RANGELAND PRODUCTIVITY--Continued

Map symbol and soil name	Range site	Potential annual production for kind of growing season		
		Favorable	Average	Unfavorable
		Lb/acre	Lb/acre	Lb/acre
50-Immokalee	South Florida Flatwoods	6,000	4,500	3,000
52-Candler	Longleaf Pine-Turkey Oak Hills	4,000	3,000	2,000
53-Tavares	Longleaf Pine-Turkey Oak Hills	4,000	3,000	2,000
54-Monteocha	Freshwater Marshes and Ponds	10,000	7,500	5,000
55-Pomello	South Florida Flatwoods	6,000	4,500	3,000
56-Vero	Freshwater Marshes and Ponds	10,000	7,500	5,000
58-Paisley	Freshwater Marshes and Ponds	10,000	7,500	5,000
60-Delray	Freshwater Marshes and Ponds	10,000	7,500	5,000
61-EauGallie	South Florida Flatwoods	6,000	4,500	3,000
64-Gator	Freshwater Marshes and Ponds	10,000	7,500	5,000
65-Candler	Longleaf Pine-Turkey Oak Hills	4,000	3,000	2,000
66-Arredondo	Longleaf Pine-Turkey Oak Hills	4,000	3,000	2,000
67-Vero	South Florida Flatwoods	6,000	4,500	3,000

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY

[Only the soils suitable for production of commercial trees are listed. Absence of an entry indicates that information was not available]

Map symbol and soil name	Ordination symbol	Management concerns				Potential productivity			Trees to plant
		Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Productivity class*	
1--------------- Arredondo	10S	Moderate	Slight	Slight	Moderate	Slash pine----------	80	10	Slash pine, loblolly pine, longleaf pine.
						Loblolly pine-------	80	8	
						Longleaf pine-------	70	6	
						Turkey oak----------	---	---	
						Magnolia------------	---	---	
3--------------- Astatula	3S	Severe	Moderate	Slight	Slight	Sand pine-----------	60	3	Sand pine.
						Turkey oak----------	---	---	
						Bluejack oak--------	---	---	
4, 5------------ Candler	9S	Moderate	Moderate	Slight	Moderate	Slash pine----------	75	9	Sand pine, longleaf pine, slash pine.
						Longleaf pine-------	60	4	
						Turkey oak----------	---	---	
6--------------- Kendrick	11S	Moderate	Moderate	Slight	Moderate	Slash pine----------	90	11	Slash pine, loblolly pine, longleaf pine.
						Loblolly pine-------	90	9	
						Longleaf pine-------	75	6	
						Turkey oak----------	---	---	
						Hickory-------------	---	---	
						Magnolia------------	---	---	
8--------------- Lake	10S	Moderate	Moderate	Slight	Moderate	Slash pine----------	80	10	Slash pine, longleaf pine.
						Longleaf pine-------	65	5	
						Bluejack oak--------	---	---	
						Turkey oak----------	---	---	
9--------------- Paisley	13W	Severe	Severe	Severe	Severe	Slash pine----------	100	13	Slash pine, loblolly pine.
						Loblolly pine-------	100	9	
						Cabbage palm--------	---	---	
						Sweetgum------------	---	---	
						Live oak------------	---	---	
						Hickory-------------	---	---	
10-------------- Sparr	10W	Moderate	Moderate	Slight	Moderate	Slash pine----------	80	10	Slash pine, loblolly pine, longleaf pine.
						Loblolly pine-------	80	8	
						Longleaf pine-------	70	6	
						Laurel oak----------	---	---	
						Water oak-----------	---	---	
						Live oak------------	---	---	
						Dogwood-------------	---	---	
						Magnolia------------	---	---	
						Hickory-------------	---	---	
11-------------- Millhopper	10S	Moderate	Moderate	Slight	Moderate	Slash pine----------	80	10	Slash pine, loblolly pine, longleaf pine.
						Loblolly pine-------	80	8	
						Longleaf pine-------	65	5	
						Live oak------------	---	---	
						Laurel oak----------	---	---	
						Dogwood-------------	---	---	

See footnotes at end of table.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

		Management concerns				Potential productivity			
Map symbol and soil name	Ordination symbol	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Productivity class*	Trees to plant
13-------------- Tavares	10S	Moderate	Moderate	Slight	Moderate	Slash pine----------	80	10	Slash pine, longleaf pine.
						Longleaf pine-------	70	6	
						Turkey oak----------	---	---	
						Bluejack oak--------	---	---	
14-------------- Lake	10S	Moderate	Moderate	Slight	Moderate	Slash pine----------	80	10	Slash pine, longleaf pine.
						Longleaf pine-------	65	5	
						Bluejack oak--------	---	---	
						Turkey oak----------	---	---	
15-------------- Adamsville	10W	Moderate	Moderate	Slight	Moderate	Slash pine----------	80	10	Slash pine, longleaf pine.
						Longleaf pine-------	65	5	
						Laurel oak----------	---	---	
						Live oak------------	---	---	
						Water oak-----------	---	---	
16-------------- Apopka	10S	Moderate	Moderate	Slight	Slight	Slash pine----------	80	10	Slash pine, loblolly pine, longleaf pine.
						Loblolly pine-------	80	8	
						Longleaf pine-------	70	6	
						Turkey oak----------	---	---	
						Bluejack oak--------	---	---	
						Post oak------------	---	---	
						Live oak------------	---	---	
17: Sumterville----	11A	Slight	Slight	Slight	Slight	Slash pine----------	90	11	Slash pine, loblolly pine, longleaf pine.
						Loblolly pine-------	90	9	
						Longleaf pine-------	75	6	
						Live oak------------	---	---	
						Hickory-------------	---	---	
						Sweetgum------------	---	---	
Mabel----------	11W	Moderate	Slight	Slight	Moderate	Slash pine----------	90	11	Slash pine, loblolly pine, longleaf pine.
						Loblolly pine-------	90	9	
						Sweetgum------------	---	---	
						Water oak-----------	---	---	
						Red maple-----------	---	---	
						Live oak------------	---	---	
						Cabbage palm--------	---	---	
Tavares--------	10S	Moderate	Moderate	Slight	Moderate	Slash pine----------	80	10	Slash pine, longleaf pine.
						Longleaf pine-------	70	6	
						Turkey oak----------	---	---	
						Bluejack oak--------	---	---	
18-------------- Okeelanta	6W	Severe	Severe	Severe	Severe	Baldcypress---------	100	6	**
						Blackgum------------	---	---	
						Carolina ash--------	---	---	
						Loblolly bay--------	---	---	
						Red maple-----------	---	---	
						Sweetbay------------	---	---	
19-------------- Apopka	10S	Moderate	Moderate	Slight	Slight	Slash pine----------	80	10	Slash pine, loblolly pine, longleaf pine.
						Loblolly pine-------	80	8	
						Longleaf pine-------	70	6	
						Turkey oak----------	---	---	
						Bluejack oak--------	---	---	
						Post oak------------	---	---	
						Live oak------------	---	---	

See footnotes at end of table.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Map symbol and soil name	Ordination symbol	Management concerns				Potential productivity			Trees to plant
		Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Productivity class*	
20 Florahome	10S	Moderate	Moderate	Slight	Moderate	Slash pine	80	10	Slash pine, longleaf pine.
						Longleaf pine	65	5	
						Laurel oak	---	---	
						Live oak	---	---	
						Turkey oak	---	---	
						Dogwood	---	---	
						Hickory	---	---	
						Sweetbay	---	---	
						Sweetgum	---	---	
21 EauGallie	10W	Moderate	Moderate	Slight	Moderate	Slash pine	80	10	Slash pine, loblolly pine, longleaf pine.
						Longleaf pine	65	5	
						Live oak	---	---	
						Water oak	---	---	
22 Smyrna	10W	Moderate	Moderate	Slight	Moderate	Slash pine	80	10	Slash pine, longleaf pine.
						Longleaf pine	70	6	
						Live oak	---	---	
						Water oak	---	---	
23 Ona	10W	Moderate	Moderate	Slight	Moderate	Slash pine	80	10	Slash pine, longleaf pine.
						Longleaf pine	70	6	
						Live oak	---	---	
						Water oak	---	---	
24 Basinger	8W	Severe	Severe	Slight	Severe	Slash pine	70	8	Slash pine.
						Longleaf pine	60	4	
25 Kanapaha	10W	Moderate	Slight	Slight	Moderate	Slash pine	80	10	Slash pine, loblolly pine, longleaf pine.
						Loblolly pine	80	8	
						Longleaf pine	70	6	
						Sweetgum	---	---	
						Maple	---	---	
						Live oak	---	---	
						Water oak	---	---	
						Magnolia	---	---	
						Hickory	---	---	
26 Vero	11W	Moderate	Moderate	Moderate	Moderate	Slash pine	85	11	Slash pine, longleaf pine.
						Longleaf pine	70	6	
						Live oak	---	---	
						Water oak	---	---	
27 Sumterville	12A	Slight	Slight	Slight	Slight	Slash pine	95	12	Slash pine, loblolly pine.
						Loblolly pine	90	9	
						Longleaf pine	75	6	
						Live oak	---	---	
						Hickory	---	---	
						Sweetgum	---	---	
28 Seffner	11W	Moderate	Moderate	Slight	Moderate	Slash pine	85	11	South Florida slash pine.
						Longleaf pine	70	6	
						Live oak	80	---	

See footnotes at end of table.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Map symbol and soil name	Ordination symbol	Management concerns				Potential productivity			Trees to plant
		Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Productivity class*	
29-------------- Nittaw	6W	Severe	Severe	Severe	Severe	Baldcypress---------	100	6	**
						Sweetgum------------	---	---	
						Cabbage palm--------	---	---	
						Red maple-----------	---	---	
						Carolina ash--------	---	---	
						Loblolly bay--------	---	---	
						Sweetbay------------	---	---	
30-------------- Placid	6W	Severe	Severe	Severe	Severe	Baldcypress---------	100	6	**
						Blackgum------------	---	---	
						Carolina ash--------	---	---	
						Loblolly bay--------	---	---	
						Red maple-----------	---	---	
						Sweetbay------------	---	---	
31-------------- Myakka	9W	Moderate	Moderate	Moderate	Moderate	Slash pine----------	75	9	Slash pine, longleaf pine.
						Longleaf pine-------	60	4	
						Live oak------------	---	---	
						Water oak-----------	---	---	
32-------------- Pompano	8W	Severe	Severe	Slight	Moderate	Slash pine----------	70	8	Slash pine.
						Water oak-----------	---	---	
33-------------- Sparr	10S	Moderate	Moderate	Slight	Moderate	Slash pine----------	80	10	Slash pine, loblolly pine, longleaf pine.
						Loblolly pine-------	80	8	
						Longleaf pine-------	70	6	
						Laurel oak----------	---	---	
						Water oak-----------	---	---	
						Live oak------------	---	---	
						Dogwood-------------	---	---	
						Magnolia------------	---	---	
						Hickory-------------	---	---	
34-------------- Tarrytown	11W	Moderate	Slight	Slight	Moderate	Slash pine----------	90	11	Slash pine, loblolly pine, longleaf pine.
						Loblolly pine-------	90	9	
						Sweetgum------------	90	7	
						Water oak-----------	90	6	
						Cabbage palm--------	---	---	
						Live oak------------	---	---	
35-------------- Pompano	6W	Severe	Severe	Severe	Severe	Baldcypress---------	100	6	**
						Pond pine-----------	60	---	
						Blackgum------------	---	---	
						Carolina ash--------	---	---	
						Loblolly bay--------	---	---	
						Red maple-----------	---	---	
						Sweetbay------------	---	---	
36-------------- Floridana	6W	Severe	Severe	Severe	Severe	Baldcypress---------	100	6	**
						Pond pine-----------	65	---	
						Blackgum------------	---	---	
						Carolina ash--------	---	---	
						Loblolly bay--------	---	---	
						Red maple-----------	---	---	
						Sweetbay------------	---	---	
37-------------- Astatula	3S	Severe	Moderate	Slight	Slight	Sand pine-----------	60	3	Sand pine.
						Turkey oak----------	---	---	
						Bluejack oak--------	---	---	

See footnotes at end of table.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Map symbol and soil name	Ordination symbol	Management concerns				Potential productivity			Trees to plant
		Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Productivity class*	
39--------------- Mabel	11W	Moderate	Slight	Slight	Moderate	Slash pine----------	90	11	Slash pine, loblolly pine, longleaf pine.
						Loblolly pine-------	90	9	
						Sweetgum------------	---	---	
						Water oak-----------	---	---	
						Live oak------------	---	---	
						Cabbage palm--------	---	---	
40--------------- Millhopper	11S	Moderate	Moderate	Slight	Moderate	Slash pine----------	85	11	Slash pine, loblolly pine, longleaf pine.
						Loblolly pine-------	80	8	
						Longleaf pine-------	65	5	
						Live oak------------	---	---	
						Laurel oak----------	---	---	
						Dogwood-------------	---	---	
41--------------- Everglades	6W	Severe	Severe	Severe	Severe	Baldcypress---------	100	6	**
						Blackgum------------	---	---	
						Carolina ash--------	---	---	
						Loblolly bay--------	---	---	
						Red maple-----------	---	---	
						Sweetbay------------	---	---	
42--------------- Adamsville	10W	Moderate	Moderate	Slight	Moderate	Slash pine----------	80	10	Slash pine, longleaf pine.
						Longleaf pine-------	65	5	
						Laurel oak----------	---	---	
						Water oak-----------	---	---	
43--------------- Basinger	6W	Severe	Severe	Severe	Severe	Baldcypress---------	100	6	**
						Pond pine-----------	60	---	
						Blackgum------------	---	---	
						Carolina ash--------	---	---	
						Loblolly bay--------	---	---	
						Red maple-----------	---	---	
						Sweetbay------------	---	---	
44--------------- Oldsmar	10W	Moderate	Moderate	Slight	Moderate	Slash pine----------	80	10	Slash pine, loblolly pine, longleaf pine.
						Longleaf pine-------	65	5	
						Live oak------------	---	---	
						Water oak-----------	---	---	
45--------------- Electra	9S	Moderate	Severe	Slight	Slight	Slash pine----------	75	9	Slash pine, longleaf pine.
						Longleaf pine-------	65	5	
						Sand pine-----------	65	---	
46--------------- Ft. Green	11W	Moderate	Slight	Slight	Moderate	Slash pine----------	85	11	Slash pine, loblolly pine.
						Longleaf pine-------	75	6	
						Live oak------------	---	---	
						Water oak-----------	---	---	
						Cabbage palm--------	---	---	
47--------------- Okeelanta	6W	Severe	Severe	Severe	Severe	Baldcypress---------	100	6	**
						Sweetgum------------	---	---	
						Blackgum------------	---	---	
						Red maple-----------	---	---	
						Carolina ash--------	---	---	
						Sweetbay------------	---	---	

See footnotes at end of table.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Map symbol and soil name	Ordination symbol	Management concerns				Potential productivity			Trees to plant
		Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Productivity class*	
48 Malabar	6W	Severe	Severe	Severe	Severe	Baldcypress Pond pine Water oak Sweetgum Laurel oak Red maple	100 65 --- --- --- ---	6 --- --- --- --- ---	**
49 Terra Ceia	6W	Severe	Severe	Severe	Severe	Baldcypress Blackgum Carolina ash Loblolly bay Red maple Sweetbay	100 --- --- --- --- ---	6 --- --- --- --- ---	**
50 Immokalee	9W	Moderate	Moderate	Moderate	Moderate	Slash pine Longleaf pine Live oak Water oak	75 65 --- ---	9 5 --- ---	Slash pine, longleaf pine.
52 Candler	8S	Moderate	Moderate	Slight	Moderate	Slash pine Longleaf pine Turkey oak	70 60 ---	8 4 ---	Sand pine, longleaf pine, slash pine.
53 Tavares	10S	Moderate	Moderate	Slight	Moderate	Slash pine Longleaf pine Turkey oak Bluejack oak	80 70 --- ---	10 6 --- ---	Slash pine, longleaf pine.
54 Monteocha	6W	Severe	Severe	Severe	Severe	Baldcypress Swamp tupelo Pond pine	100 --- ---	6 --- ---	**
55 Pomello	9S	Moderate	Severe	Moderate	Moderate	Slash pine Longleaf pine Sand pine	75 60 60	9 4 3	Slash pine, longleaf pine.
56 Vero	6W	Severe	Severe	Severe	Severe	Baldcypress Pond pine Blackgum Red maple Carolina ash Sweetbay	100 60 --- --- --- ---	6 --- --- --- --- ---	**
57 Gator	6W	Severe	Severe	Severe	Severe	Baldcypress Sweetgum Red maple Pond pine Carolina ash Sweetbay	100 --- --- --- --- ---	6 --- --- --- --- ---	**

See footnotes at end of table.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Map symbol and soil name	Ordination symbol	Management concerns				Potential productivity			Trees to plant
		Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Productivity class*	
58 Paisley	6W	Severe	Severe	Severe	Severe	Baldcypress	100	6	**
						Pond pine	65	---	
						Red maple	---	---	
						Carolina ash	---	---	
						Sweetbay	---	---	
60 Delray	3W	Severe	Severe	Severe	Severe	Baldcypress	100	6	**
						Pond pine	65	---	
						Red maple	---	---	
						Carolina ash	---	---	
						Sweetbay	---	---	
61 EauGallie	10W	Moderate	Moderate	Slight	Moderate	Slash pine	80	10	Slash pine, loblolly pine, longleaf pine.
						Longleaf pine	70	6	
						Live oak	---	---	
						Water oak	---	---	
63: Floridana	3W	Severe	Severe	Severe	Severe	Baldcypress	100	6	**
						Water oak	---	---	
						Sweetgum	---	---	
						Laurel oak	---	---	
						Red maple	---	---	
Basinger	6W	Severe	Severe	Severe	Severe	Baldcypress	100	6	**
						Water oak	---	---	
						Sweetgum	---	---	
						Laurel oak	---	---	
						Red maple	---	---	
65 Candler	8S	Moderate	Moderate	Slight	Moderate	Slash pine	70	8	Sand pine, longleaf pine, slash pine.
						Longleaf pine	35	1	
						Turkey oak	75	---	
66 Arredondo	10S	Moderate	Slight	Slight	Moderate	Slash pine	80	10	Slash pine, loblolly pine, longleaf pine.
						Longleaf pine	70	6	
						Loblolly pine	80	8	
						Turkey oak	---	---	
						Live oak	---	---	
						Laurel oak	---	---	
67 Vero	10W	Moderate	Moderate	Moderate	Moderate	Slash pine	80	10	Slash pine, loblolly pine, longleaf pine.
						Longleaf pine	70	6	
						Live oak	---	---	
						Water oak	---	---	
68 Chobee	6W	Severe	Moderate	Slight	Severe	Baldcypress	100	6	**
						Red maple	---	---	
						Sweetgum	---	---	
						Blackgum	---	---	

* Productivity class is the yield in cubic meters per hectare per year calculated at the age of culmination of mean annual increment for fully stocked natural stands.

** No recommended trees to plant because of severe ratings for management concerns. Trees are harvested on these flooded or ponded soils, but regrowth is caused by natural regeneration rather than planting of seedlings. A source of desirable seedlings for adapted trees, such as baldcypress, is not readily available.

TABLE 8.--RECREATIONAL DEVELOPMENT

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "moderate" and "severe." Absence of an entry indicates that the soil was not rated]

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
1----- Arredondo	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty.
3----- Astatula	Severe: too sandy.	Severe: too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Severe: droughty.
4----- Candler	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
5----- Candler	Severe: too sandy.	Severe: too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Severe: droughty.
6----- Kendrick	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty.
8----- Lake	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
9----- Paisley	Severe: flooding, wetness, too sandy.	Severe: wetness, too sandy.	Severe: wetness, too sandy, large stones.	Severe: wetness, too sandy.	Severe: wetness, large stones.
10----- Sparr	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: wetness, droughty.
11----- Millhopper	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty, too sandy.
13----- Tavares	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
14----- Lake	Severe: too sandy.	Severe: too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Severe: droughty.
15----- Adamsville	Severe: too sandy, large stones.	Severe: too sandy.	Severe: too sandy, large stones.	Severe: too sandy.	Severe: droughty, large stones.
16----- Apopka	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
17: Sumterville-----	Severe: too sandy.	Severe: too sandy.	Severe: too sandy, large stones.	Severe: too sandy.	Moderate: large stones, wetness, droughty.
Mabel-----	Severe: too sandy.	Severe: too sandy.	Severe: large stones, too sandy.	Severe: too sandy.	Moderate: wetness.

TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairway
17: Tavares	Severe: too sandy, large stones.	Severe: too sandy.	Severe: too sandy, large stones.	Severe: too sandy.	Severe: droughty, large stones.
18 Okeelanta	Severe: ponding, excess humus.	Severe: ponding, excess humus.	Severe: excess humus, ponding.	Severe: ponding, excess humus.	Severe: ponding, excess humus.
19 Apopka	Severe: too sandy.	Severe: too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Severe: droughty.
20 Florahome	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty.
21 EauGallie	Severe: wetness, too sandy.	Severe: wetness, too sandy.	Severe: wetness, too sandy, large stones.	Severe: wetness, too sandy.	Severe: wetness, droughty, large stones.
22 Smyrna	Severe: wetness, too sandy.	Severe: wetness, too sandy.	Severe: too sandy, wetness.	Severe: wetness, too sandy.	Severe: wetness.
23 Ona	Severe: wetness, too sandy.	Severe: wetness, too sandy.	Severe: too sandy, wetness.	Severe: wetness, too sandy.	Severe: wetness.
24 Basinger	Severe: wetness, too sandy.	Severe: wetness, too sandy.	Severe: too sandy, wetness.	Severe: wetness, too sandy.	Severe: wetness.
25 Kanapaha	Severe: wetness, too sandy, large stones.	Severe: wetness, too sandy.	Severe: too sandy, wetness, large stones.	Severe: wetness, too sandy.	Severe: wetness, droughty, large stones.
26 Vero	Severe: wetness, too sandy, large stones.	Severe: wetness, too sandy.	Severe: too sandy, wetness, large stones.	Severe: wetness, too sandy.	Severe: wetness, large stones.
27 Sumterville	Severe: too sandy.	Severe: too sandy.	Severe: too sandy, large stones.	Severe: too sandy.	Moderate: large stones, wetness, droughty.
28 Seffner	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: wetness, droughty.
29 Nittaw	Severe: flooding, wetness, excess humus.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.
30 Placid	Severe: ponding, too sandy.	Severe: ponding, too sandy.	Severe: too sandy, ponding.	Severe: ponding, too sandy.	Severe: ponding.

TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
31-------------------- Myakka	Severe: wetness, too sandy.	Severe: wetness, too sandy.	Severe: too sandy, wetness.	Severe: wetness, too sandy.	Severe: wetness.
32-------------------- Pompano	Severe: wetness, too sandy.	Severe: wetness, too sandy.	Severe: too sandy, wetness.	Severe: wetness, too sandy.	Severe: wetness, droughty.
33-------------------- Sparr	Severe: too sandy, large stones.	Severe: too sandy.	Severe: too sandy, large stones.	Severe: too sandy.	Moderate: wetness, droughty, large stones.
34-------------------- Tarrytown	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly, large stones.	Moderate: wetness.	Moderate: large stones, wetness.
35-------------------- Pompano	Severe: ponding, too sandy.	Severe: ponding, too sandy.	Severe: too sandy, ponding.	Severe: ponding, too sandy.	Severe: ponding, droughty.
36-------------------- Floridana	Severe: ponding, percs slowly, too sandy.	Severe: ponding, too sandy, percs slowly.	Severe: too sandy, ponding, percs slowly.	Severe: ponding, too sandy.	Severe: ponding.
37-------------------- Astatula	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
39-------------------- Mabel	Severe: too sandy.	Severe: too sandy.	Severe: large stones, too sandy.	Severe: too sandy.	Moderate: wetness.
40-------------------- Millhopper	Severe: too sandy, large stones.	Severe: too sandy.	Severe: too sandy, large stones.	Severe: too sandy.	Moderate: droughty, too sandy, large stones.
41-------------------- Everglades	Severe: flooding, wetness, excess humus.	Severe: wetness, excess humus.	Severe: excess humus, wetness, flooding.	Severe: wetness, excess humus.	Severe: wetness, flooding, excess humus.
42-------------------- Adamsville	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty, too sandy.
43-------------------- Basinger	Severe: ponding, too sandy.	Severe: ponding, too sandy.	Severe: too sandy, ponding.	Severe: ponding, too sandy.	Severe: ponding.
44-------------------- Oldsmar	Severe: wetness, too sandy, large stones.	Severe: wetness, too sandy.	Severe: too sandy, wetness, large stones.	Severe: wetness, too sandy.	Severe: wetness, droughty, large stones.
45-------------------- Electra	Severe: too sandy.	Severe: too sandy.	Severe: large stones, too sandy.	Severe: too sandy.	Severe: droughty, large stones.

TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
46 Ft. Green	Severe: wetness, too sandy.	Severe: wetness, too sandy.	Severe: too sandy, wetness, large stones.	Severe: wetness, too sandy.	Severe: wetness, large stones.
47 Okeelanta	Severe: flooding, excess humus, wetness.	Severe: excess humus, wetness.	Severe: excess humus, flooding, wetness.	Severe: excess humus, wetness.	Severe: flooding, excess humus, wetness.
48 Malabar	Severe: flooding, wetness, too sandy.	Severe: wetness, too sandy.	Severe: too sandy, wetness, flooding.	Severe: wetness, too sandy.	Severe: wetness, droughty, flooding.
49 Terra Ceia	Severe: wetness, excess humus.	Severe: wetness, excess humus.	Severe: excess humus, wetness, flooding.	Severe: ponding, excess humus, wetness.	Severe: wetness, excess humus, flooding.
50 Immokalee	Severe: wetness, too sandy.	Severe: wetness, too sandy.	Severe: too sandy, wetness.	Severe: wetness, too sandy.	Severe: wetness, droughty.
51. Pits-Dumps					
52 Candler	Severe: too sandy.	Severe: too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Severe: droughty.
53 Tavares	Severe: too sandy, large stones.	Severe: too sandy.	Severe: too sandy, large stones.	Severe: too sandy.	Severe: droughty, large stones.
54 Monteocha	Severe: ponding, too sandy.	Severe: ponding, too sandy.	Severe: too sandy, ponding.	Severe: ponding, too sandy.	Severe: ponding.
55 Pomello	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
56 Vero	Severe: ponding, too sandy.	Severe: ponding, too sandy.	Severe: too sandy, ponding.	Severe: ponding, too sandy.	Severe: ponding.
57 Gator	Severe: flooding, wetness, excess humus.	Severe: wetness, excess humus.	Severe: excess humus, wetness, flooding.	Severe: wetness, excess humus.	Severe: wetness, flooding, excess humus.
58 Paisley	Severe: ponding, too sandy.	Severe: ponding, too sandy.	Severe: too sandy, ponding.	Severe: ponding, too sandy.	Severe: ponding.
59. Arents					
60 Delray	Severe: ponding, too sandy.	Severe: ponding, too sandy.	Severe: too sandy, ponding.	Severe: ponding, too sandy.	Severe: ponding.

TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
61------------------- EauGallie	Severe: wetness, too sandy.	Severe: wetness, too sandy.	Severe: wetness, too sandy.	Severe: wetness, too sandy.	Severe: wetness, droughty.
62. Urban land					
63: Floridana------------	Severe: flooding, wetness, percs slowly.	Severe: wetness, too sandy, percs slowly.	Severe: too sandy, wetness, flooding.	Severe: wetness, too sandy.	Severe: wetness, flooding.
Basinger-------------	Severe: flooding, wetness, too sandy.	Severe: wetness, too sandy.	Severe: too sandy, wetness, flooding.	Severe: wetness, too sandy.	Severe: wetness, flooding.
64------------------- Gator	Severe: ponding, percs slowly, excess humus.	Severe: ponding, excess humus, percs slowly.	Severe: excess humus, ponding, percs slowly.	Severe: ponding, excess humus.	Severe: ponding, excess humus.
65------------------- Candler	Severe: too sandy, large stones.	Severe: too sandy.	Severe: large stones, too sandy.	Severe: too sandy.	Severe: droughty, large stones.
66------------------- Arredondo	Severe: too sandy, large stones.	Severe: too sandy.	Severe: large stones, too sandy.	Severe: too sandy.	Moderate: large stones, droughty.
67------------------- Vero	Severe: wetness, percs slowly, too sandy.	Severe: wetness, too sandy, percs slowly.	Severe: too sandy, wetness, percs slowly.	Severe: wetness, too sandy.	Severe: wetness.
68------------------- Chobee	Severe: flooding, wetness, percs slowly.	Severe: wetness, percs slowly.	Severe: wetness, flooding, percs slowly.	Severe: wetness.	Severe: wetness, flooding.

TABLE 9.--WILDLIFE HABITAT

[See text for definitions of "good," "fair," "poor," and "very poor." Absence of an entry indicates that the soil was not rated]

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
1----------------- Arredondo	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
3----------------- Astatula	Poor	Poor	Poor	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
4, 5-------------- Candler	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
6----------------- Kendrick	Fair	Fair	Good	Good	Good	Poor	Poor	Fair	Good	Very poor.
8----------------- Lake	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
9----------------- Paisley	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
10---------------- Sparr	Poor	Fair	Good	Fair	Fair	Poor	Fair	Fair	Fair	Poor.
11---------------- Millhopper	Poor	Fair	Good	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
13---------------- Tavares	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
14---------------- Lake	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
15---------------- Adamsville	Poor	Poor	Fair	Fair	Fair	Poor	Poor	Poor	Fair	Poor.
16---------------- Apopka	Poor	Fair	Fair	Poor	Fair	Very poor.	Very poor.	Fair	Poor	Very poor.
17:										
Sumterville-------	Fair	Fair	Good	Fair	Fair	Poor	Very poor.	Fair	Fair	Very poor.
Mabel-------------	Fair	Fair	Good	Good	Good	Poor	Fair	Fair	Good	Poor.
Tavares-----------	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
18---------------- Okeelanta	Very poor.	Poor	Very poor.	Very poor.	Very poor.	Good	Good	Very poor.	---	Good.
19---------------- Apopka	Poor	Fair	Fair	Poor	Fair	Very poor.	Very poor.	Fair	Poor	Very poor.
20---------------- Florahome	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
21---------------- EauGallie	Poor	Poor	Fair	Poor	Poor	Poor	Poor	Poor	Poor	Poor.

TABLE 9.--WILDLIFE HABITAT--Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
22 Smyrna	Poor	Fair	Fair	Poor	Fair	Fair	Fair	Fair	Fair	Fair.
23 Ona	Poor	Fair	Fair	Poor	Fair	Fair	Fair	Fair	Fair	Fair.
24 Basinger	Poor	Poor	Fair	Poor	Poor	Good	Fair	Poor	Poor	Fair.
25 Kanapaha	Poor	Fair	Fair	Fair	Fair	Poor	Fair	Fair	Fair	Poor.
26 Vero	Poor	Poor	Poor	Poor	Good	Fair	Poor	Poor	Fair	Poor.
27 Sumterville	Fair	Fair	Good	Fair	Fair	Poor	Very poor.	Fair	Fair	Very poor.
28 Seffner	Poor	Poor	Fair	Good	Good	Poor	Very poor.	Fair	Good	Very poor.
29 Nittaw	Very poor.	Poor	Poor	Fair	Poor	Good	Good	Poor	Poor	Good.
30 Placid	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Good	Good	Very poor.	Very poor.	Good.
31 Myakka	Poor	Fair	Fair	Poor	Poor	Fair	Poor	Fair	Poor	Poor.
32 Pompano	Poor	Fair	Poor	Poor	Poor	Fair	Fair	Poor	Poor	Fair.
33 Sparr	Poor	Fair	Good	Fair	Fair	Poor	Fair	Fair	Fair	Poor.
34 Tarrytown	Fair	Fair	Good	Good	Good	Poor	Fair	Fair	Good	Poor.
35 Pompano	Very poor.	Very poor.	Poor	Poor	Poor	Good	Good	Very poor.	Poor	Good.
36 Floridana	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Good	Good	Very poor.	Very poor.	Good.
37 Astatula	Poor	Poor	Poor	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
39 Mabel	Fair	Fair	Good	Good	Good	Poor	Fair	Fair	Good	Poor.
40 Millhopper	Poor	Fair	Good	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
41 Everglades	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Good	Good	Very poor.	Very poor.	Good.
42 Adamsville	Poor	Poor	Fair	Fair	Fair	Poor	Poor	Poor	Fair	Poor.

TABLE 9.--WILDLIFE HABITAT--Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
43----------------- Basinger	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Good	Good	Very poor.	Very poor.	Good.
44----------------- Oldsmar	Poor	Fair	Fair	Poor	Fair	Poor	Poor	Fair	Fair	Poor.
45----------------- Electra	Poor	Poor	Fair	Poor	Poor	Poor	Poor	Poor	Poor	Poor.
46----------------- Ft. Green	Poor	Poor	Poor	Fair	Fair	Fair	Good	Fair	Fair	Fair.
47----------------- Okeelanta	Very poor.	Poor	Very poor.	Very poor.	Very poor.	Good	Good	Very poor.	Very poor.	Good.
48----------------- Malabar	Very poor.	Very poor.	Poor	Poor	Poor	Fair	Fair	Very poor.	Poor	Fair.
49----------------- Terra Ceia	Very poor.	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
50----------------- Immokalee	Poor	Poor	Fair	Poor	Poor	Fair	Poor	Poor	Poor	Poor.
51. Pits-Dumps										
52----------------- Candler	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
53----------------- Tavares	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
54----------------- Monteocha	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Good	Good	Very poor.	Very poor.	Good.
55----------------- Pomello	Poor	Poor	Poor	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
56----------------- Vero	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Fair	Good	Very poor.	Very poor.	Good.
57----------------- Gator	Very poor.	Very poor.	Very poor.	Fair	Very poor.	Good	Good	Very poor.	Poor	Good.
58----------------- Paisley	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Fair	Good	Very poor.	Very poor.	Good.
59. Arents										
60----------------- Delray	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Good	Good	Very poor.	Very poor.	Good.
61----------------- EauGallie	Poor	Poor	Fair	Poor	Poor	Poor	Poor	Poor	Poor	Poor.
62. Urban land										

TABLE 9.--WILDLIFE HABITAT--Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
63:										
Floridana	Very poor.	Poor	Fair	Poor	Poor	Good	Good	Poor	Poor	Good.
Basinger	Very poor.	Very poor.	Poor	Fair	Poor	Fair	Fair	Very poor.	Poor	Fair.
64 Gator	Very poor.	Very poor.	Very poor.	Poor	Very poor.	Good	Good	Very poor.	Very poor.	Good.
65 Candler	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
66 Arredondo	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
67 Vero	Poor	Poor	Poor	Poor	Good	Fair	Poor	Poor	Fair	Poor.
68 Chobee	Poor	Poor	Poor	Fair	Poor	Good	Good	Poor	Poor	Good.

TABLE 10.--BUILDING SITE DEVELOPMENT

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition; it does not eliminate the need for onsite investigation]

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
1----------------- Arredondo	Severe: cutbanks cave.	Slight---------	Slight---------	Slight---------	Slight---------	Moderate: droughty.
3----------------- Astatula	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Severe: droughty.
4----------------- Candler	Severe: cutbanks cave.	Slight---------	Slight---------	Slight---------	Slight---------	Severe: droughty.
5----------------- Candler	Severe: cutbanks cave.	Slight---------	Slight---------	Moderate: slope.	Slight---------	Severe: droughty.
6----------------- Kendrick	Severe: cutbanks cave.	Slight---------	Slight---------	Slight---------	Slight---------	Moderate: droughty.
8----------------- Lake	Severe: cutbanks cave.	Slight---------	Slight---------	Slight---------	Slight---------	Severe: droughty.
9----------------- Paisley	Severe: wetness, large stones.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: low strength, wetness, shrink-swell.	Severe: wetness, large stones.
10---------------- Sparr	Severe: cutbanks cave, wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness, droughty.
11---------------- Millhopper	Severe: cutbanks cave.	Slight---------	Moderate: wetness.	Slight---------	Slight---------	Moderate: droughty, too sandy.
13---------------- Tavares	Severe: cutbanks cave.	Slight---------	Moderate: wetness.	Slight---------	Slight---------	Severe: droughty.
14---------------- Lake	Severe: cutbanks cave.	Slight---------	Slight---------	Moderate: slope.	Slight---------	Severe: droughty.
15---------------- Adamsville	Severe: cutbanks cave, wetness, large stones.	Moderate: wetness, large stones.	Severe: wetness, large stones.	Moderate: wetness, large stones.	Moderate: wetness, large stones.	Severe: droughty, large stones.
16---------------- Apopka	Severe: cutbanks cave.	Slight---------	Slight---------	Slight---------	Slight---------	Severe: droughty.
17:						
Sumterville------	Severe: cutbanks cave, wetness, large stones.	Moderate: wetness, large stones.	Severe: wetness, shrink-swell, large stones.	Moderate: wetness, large stones.	Moderate: wetness, large stones.	Moderate: large stones, wetness, droughty.
Mabel------------	Severe: wetness, large stones.	Severe: shrink-swell, large stones.	Severe: wetness, shrink-swell, large stones.	Severe: shrink-swell, large stones.	Severe: shrink-swell, low strength, large stones.	Moderate: wetness.

TABLE 10.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
17: Tavares	Severe: cutbanks cave, large stones.	Slight: large stones.	Moderate: wetness, large stones.	Slight: large stones.	Slight: large stones.	Severe: droughty, large stones.
18 Okeelanta	Severe: cutbanks cave, excess humus, ponding.	Severe: subsides, ponding, low strength.	Severe: subsides, ponding.	Severe: subsides, ponding, low strength.	Severe: subsides, ponding.	Severe: ponding, excess humus.
19 Apopka	Severe: cutbanks cave.	Slight	Slight	Moderate: slope.	Slight	Severe: droughty.
20 Florahome	Severe: cutbanks cave.	Slight	Moderate: wetness.	Slight	Slight	Moderate: droughty.
21 EauGallie	Severe: cutbanks cave, wetness, large stones.	Severe: wetness, large stones.	Severe: wetness, large stones.	Severe: wetness, large stones.	Severe: wetness, large stones.	Severe: wetness, droughty, large stones.
22 Smyrna	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
23 Ona	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
24 Basinger	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
25 Kanapaha	Severe: cutbanks cave, wetness, large stones.	Severe: wetness, large stones.	Severe: wetness, large stones.	Severe: wetness, large stones.	Severe: wetness, large stones.	Severe: wetness, droughty, large stones.
26 Vero	Severe: cutbanks cave, wetness, large stones.	Severe: wetness, large stones.	Severe: wetness, large stones.	Severe: wetness, large stones.	Severe: low strength, wetness, large stones.	Severe: wetness, large stones.
27 Sumterville	Severe: cutbanks cave, wetness, large stones.	Moderate: wetness, large stones.	Severe: wetness, shrink-swell, large stones.	Moderate: wetness, large stones.	Moderate: wetness, large stones.	Moderate: large stones, wetness, droughty.
28 Seffner	Severe: cutbanks cave, wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness, droughty.
29 Nittaw	Severe: wetness.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: shrink-swell, low strength, wetness.	Severe: wetness, flooding.
30 Placid	Severe: cutbanks cave, ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.

TABLE 10.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
31 Myakka	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
32 Pompano	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness, droughty.
33 Sparr	Severe: cutbanks cave, wetness, large stones.	Moderate: wetness, large stones.	Severe: wetness, large stones.	Moderate: wetness, large stones.	Moderate: wetness, large stones.	Moderate: wetness, droughty, large stones.
34 Tarrytown	Severe: cutbanks cave, wetness, large stones.	Moderate: wetness, large stones.	Severe: wetness, large stones.	Moderate: wetness, large stones.	Moderate: wetness, large stones.	Moderate: large stones, wetness.
35 Pompano	Severe: cutbanks cave, ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding, droughty.
36 Floridana	Severe: cutbanks cave, ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
37 Astatula	Severe: cutbanks cave.	Slight	Slight	Moderate: slope.	Slight	Severe: droughty.
39 Mabel	Severe: wetness, large stones.	Severe: shrink-swell, large stones.	Severe: wetness, shrink-swell, large stones.	Severe: shrink-swell, large stones.	Severe: shrink-swell, low strength, large stones.	Moderate: wetness.
40 Millhopper	Severe: cutbanks cave, large stones.	Slight: large stones.	Moderate: wetness, large stones.	Slight: large stones.	Slight: large stones.	Moderate: droughty, too sandy, large stones.
41 Everglades	Severe: excess humus, wetness.	Severe: subsides, flooding, wetness.	Severe: subsides, flooding, wetness.	Severe: subsides, flooding, wetness.	Severe: subsides, flooding, wetness.	Severe: wetness, flooding, excess humus.
42 Adamsville	Severe: cutbanks cave, wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: droughty, too sandy.
43 Basinger	Severe: cutbanks cave, ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
44 Oldsmar	Severe: cutbanks cave, wetness, large stones.	Severe: wetness, large stones.	Severe: wetness, large stones.	Severe: wetness, large stones.	Severe: wetness, large stones.	Severe: wetness, droughty, large stones.
45 Electra	Severe: cutbanks cave, wetness, large stones.	Moderate: wetness, large stones.	Severe: wetness, large stones.	Moderate: wetness, large stones.	Moderate: wetness, large stones.	Severe: droughty, large stones.

TABLE 10.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
46---------------- Ft. Green	Severe: cutbanks cave, wetness, large stones.	Severe: wetness, large stones.	Severe: wetness, large stones.	Severe: wetness, large stones.	Severe: wetness, large stones.	Severe: wetness, large stones.
47---------------- Okeelanta	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: flooding, excess humus, wetness.
48---------------- Malabar	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, droughty, flooding.
49---------------- Terra Ceia	Severe: excess humus, wetness.	Severe: wetness, low strength, flooding.	Severe: wetness, low strength, flooding.	Severe: wetness, low strength, flooding.	Severe: wetness, low strength, flooding.	Severe: wetness, excess humus, flooding.
50---------------- Immokalee	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness, droughty.
51. Pits-Dumps						
52---------------- Candler	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Severe: droughty.
53---------------- Tavares	Severe: cutbanks cave, large stones.	Slight: large stones.	Moderate: wetness, large stones.	Slight: large stones.	Slight: large stones.	Severe: droughty, large stones.
54---------------- Monteocha	Severe: cutbanks cave, ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
55---------------- Pomello	Severe: cutbanks cave, wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Severe: droughty.
56---------------- Vero	Severe: cutbanks cave, ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
57---------------- Gator	Severe: cutbanks cave, excess humus, wetness.	Severe: subsides, flooding, wetness.	Severe: subsides, flooding, wetness.	Severe: subsides, flooding, wetness.	Severe: subsides, wetness, flooding.	Severe: wetness, flooding, excess humus.
58---------------- Paisley	Severe: ponding.	Severe: ponding, shrink-swell.	Severe: ponding, shrink-swell.	Severe: ponding, shrink-swell.	Severe: low strength, ponding, shrink-swell.	Severe: ponding.
59. Arents						

TABLE 10.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
60---------------- Delray	Severe: cutbanks cave, ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
61---------------- EauGallie	Severe: wetness, cutbanks cave.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness, droughty.
62. Urban land						
63: Floridana--------	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness, flooding.
Basinger---------	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.
64---------------- Gator	Severe: cutbanks cave, excess humus, ponding.	Severe: ponding, low strength.	Severe: ponding.	Severe: ponding, low strength.	Severe: ponding.	Severe: ponding, excess humus.
65---------------- Candler	Severe: cutbanks cave, large stones.	Slight: large stones.	Slight: large stones.	Slight: large stones.	Slight: large stones.	Severe: droughty, large stones.
66---------------- Arredondo	Severe: cutbanks cave, large stones.	Slight: large stones.	Slight: large stones.	Slight: large stones.	Slight: large stones.	Moderate: large stones, droughty.
67---------------- Vero	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
68---------------- Chobee	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness, flooding.

TABLE 11.--SANITARY FACILITIES

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "good," and other terms. Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition; it does not eliminate the need for onsite investigation]

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
1 Arredondo	Slight	Severe: seepage.	Severe: too sandy.	Severe: seepage.	Poor: too sandy.
3 Astatula	Moderate*: slope.	Severe: seepage, slope.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
4, 5 Candler	Slight*	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
6 Kendrick	Slight	Severe: seepage.	Slight	Severe: seepage.	Good.
8 Lake	Slight*	Severe: seepage.	Severe: too sandy.	Severe: seepage.	Poor: seepage, too sandy.
9 Paisley	Severe: wetness, percs slowly, large stones.	Severe: flooding, wetness, large stones.	Severe: wetness, too clayey, large stones.	Severe: wetness.	Poor: too clayey, wetness, large stones.
10 Sparr	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy.
11 Millhopper	Moderate: wetness.	Severe: seepage.	Severe: too sandy.	Severe: seepage.	Poor: seepage, too sandy.
12 Tavares	Moderate*: wetness.	Severe: seepage.	Severe: seepage, wetness, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
14 Lake	Slight*	Severe: seepage.	Severe: too sandy.	Severe: seepage.	Poor: seepage, too sandy.
15 Adamsville	Severe: wetness, poor filter, large stones.	Severe: seepage, wetness.	Severe: seepage, wetness, large stones.	Severe: seepage, wetness.	Poor: seepage, too sandy, large stones.
16 Apopka	Slight	Severe: seepage.	Severe: too sandy.	Severe: seepage.	Poor: seepage, too sandy.
17: Sumterville	Severe: wetness, percs slowly, large stones.	Severe: seepage, wetness, large stones.	Severe: wetness, too clayey, large stones.	Severe: seepage.	Poor: too clayey, hard to pack, large stones.

See footnote at end of table.

TABLE 11.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
17:					
Mabel	Severe: wetness, percs slowly, large stones.	Severe: wetness, large stones.	Severe: wetness, too clayey, large stones.	Moderate: wetness.	Poor: too clayey, hard to pack, large stones.
Tavares	Moderate*: wetness, large stones.	Severe: seepage, large stones.	Severe: seepage, wetness, too sandy.	Severe: seepage.	Poor: seepage, too sandy, large stones.
18 Okeelanta	Severe: ponding, poor filter.	Severe: seepage, excess humus, ponding.	Severe: seepage, ponding, too sandy.	Severe: seepage, ponding.	Poor: seepage, too sandy, ponding.
19 Apopka	Slight	Severe: seepage.	Severe: too sandy.	Severe: seepage.	Poor: seepage, too sandy.
20 Florahome	Moderate*: wetness.	Severe: seepage.	Severe: seepage, wetness, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
21 EauGallie	Severe: wetness, large stones.	Severe: wetness, seepage, large stones.	Severe: wetness, seepage, large stones.	Severe: wetness, seepage.	Poor: too sandy, wetness, seepage.
22 Smyrna	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy, wetness.
23 Ona	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy, wetness.
24 Basinger	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy, wetness.
25 Kanapaha	Severe: wetness, percs slowly, large stones.	Severe: seepage, wetness.	Severe: wetness, too sandy, large stones.	Severe: seepage, wetness.	Poor: seepage, too sandy, wetness.
26 Vero	Severe: wetness, percs slowly, large stones.	Severe: seepage, wetness, large stones.	Severe: wetness, large stones.	Severe: seepage, wetness.	Poor: wetness, large stones.
27 Sumterville	Severe: wetness, percs slowly, large stones.	Severe: seepage, wetness, large stones.	Severe: wetness, too clayey, large stones.	Severe: seepage.	Poor: too clayey, hard to pack, large stones.

See footnote at end of table.

TABLE 11.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
28 Seffner	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy.
29 Nittaw	Severe: flooding, wetness, percs slowly.	Severe: seepage, flooding, excess humus.	Severe: flooding, seepage, wetness.	Severe: flooding, wetness.	Poor: too clayey, hard to pack, wetness.
30 Placid	Severe: ponding, poor filter.	Severe: seepage, ponding.	Severe: seepage, ponding, too sandy.	Severe: seepage, ponding.	Poor: seepage, too sandy, ponding.
31 Myakka	Severe: wetness.	Severe: seepage, wetness.	Severe: seepage, wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy, wetness.
32 Pompano	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy, wetness.
33 Sparr	Severe: wetness, large stones.	Severe: seepage, wetness, large stones.	Severe: wetness, too sandy, large stones.	Severe: seepage, wetness.	Poor: seepage, too sandy, large stones.
34 Tarrytown	Severe: wetness, percs slowly, large stones.	Severe: seepage, large stones.	Severe: seepage, wetness, large stones.	Severe: wetness.	Fair: too clayey, wetness, large stones.
35 Pompano	Severe: ponding, poor filter.	Severe: seepage, ponding.	Severe: seepage, ponding, too sandy.	Severe: seepage, ponding.	Poor: seepage, too sandy, ponding.
36 Floridana	Severe: ponding, percs slowly, poor filter.	Severe: seepage, ponding.	Severe: ponding.	Severe: ponding, seepage.	Poor: ponding.
37 Astatula	Slight*	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
39 Mabel	Severe: wetness, percs slowly, large stones.	Severe: wetness, large stones.	Severe: wetness, too clayey, large stones.	Moderate: wetness.	Poor: too clayey, hard to pack, large stones.
40 Millhopper	Moderate: wetness, large stones.	Severe: seepage.	Severe: too sandy, large stones.	Severe: seepage.	Poor: seepage, too sandy, large stones.

See footnote at end of table.

TABLE 11.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
41------------------ Everglades	Severe: subsides, flooding, wetness.	Severe: seepage, flooding, excess humus.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage, wetness.	Poor: wetness, excess humus.
42------------------ Adamsville	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy.
43------------------ Basinger	Severe: ponding, poor filter.	Severe: seepage, ponding.	Severe: seepage, ponding, too sandy.	Severe: seepage, ponding.	Poor: seepage, too sandy, ponding.
44------------------ Oldsmar	Severe: wetness, percs slowly, large stones.	Severe: seepage, wetness, large stones.	Severe: too sandy, wetness, large stones.	Severe: seepage, wetness.	Poor: seepage, too sandy, wetness.
45------------------ Electra	Severe: wetness, poor filter, large stones.	Severe: seepage, wetness, large stones.	Severe: wetness, too sandy, large stones.	Severe: seepage, wetness.	Poor: seepage, too sandy, large stones.
46------------------ Ft. Green	Severe: wetness, percs slowly, large stones.	Severe: seepage, wetness, large stones.	Severe: wetness, large stones.	Severe: seepage, wetness.	Poor: wetness, large stones.
47------------------ Okeelanta	Severe: flooding, poor filter, wetness.	Severe: seepage, flooding, excess humus.	Severe: seepage, flooding, wetness.	Severe: seepage, flooding, wetness.	Poor: seepage, too sandy, wetness.
48------------------ Malabar	Severe: flooding, wetness, percs slowly.	Severe: seepage, flooding, wetness.	Severe: flooding, wetness, too sandy.	Severe: flooding, seepage, wetness.	Poor: seepage, too sandy, wetness.
49------------------ Terra Ceia	Severe: flooding, wetness, poor filter.	Severe: seepage, flooding, excess humus.	Severe: flooding, wetness, excess humus.	Severe: flooding, seepage, wetness.	Poor: wetness, excess humus.
50------------------ Immokalee	Severe: wetness.	Severe: seepage, wetness.	Severe: seepage, wetness.	Severe: seepage, wetness.	Poor: seepage, too sandy, wetness.
51. Pits-Dumps					
52------------------ Candler	Moderate*: slope.	Severe: seepage, slope.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
53------------------ Tavares	Moderate*: wetness, large stones.	Severe: seepage, large stones.	Severe: seepage, wetness, too sandy.	Severe: seepage.	Poor: seepage, too sandy, large stones.

See footnote at end of table.

TABLE 11.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
54----------------- Monteocha	Severe: ponding, poor filter.	Severe: seepage, ponding.	Severe: seepage, ponding, too sandy.	Severe: seepage, ponding.	Poor: seepage, too sandy, ponding.
55----------------- Pomello	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy.
56----------------- Vero	Severe: ponding, percs slowly, poor filter.	Severe: seepage, ponding.	Severe: ponding.	Severe: seepage, ponding.	Poor: ponding.
57----------------- Gator	Severe: flooding, wetness, poor filter.	Severe: seepage, flooding, excess humus.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage, wetness.	Poor: wetness, excess humus.
58----------------- Paisley	Severe: ponding, percs slowly.	Severe: ponding.	Severe: ponding, too clayey.	Severe: ponding.	Poor: too clayey, hard to pack, ponding.
59. Arents					
60----------------- Delray	Severe: ponding, poor filter.	Severe: seepage, ponding.	Severe: seepage, ponding, too sandy.	Severe: seepage, ponding.	Poor: seepage, too sandy, ponding.
61----------------- EauGallie	Severe: wetness.	Severe: wetness, seepage.	Severe: wetness, seepage, too sandy.	Severe: wetness, seepage.	Poor: too sandy, wetness, seepage.
62. Urban land					
63: Floridana----------	Severe: flooding, wetness, percs slowly.	Severe: seepage, flooding.	Severe: flooding, wetness.	Severe: flooding, seepage, wetness.	Poor: wetness.
Basinger-----------	Severe: flooding, wetness, poor filter.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage, wetness.	Poor: seepage, too sandy, wetness.
64----------------- Gator	Severe: ponding, percs slowly, poor filter.	Severe: seepage, excess humus, ponding.	Severe: seepage, ponding.	Severe: seepage, ponding.	Poor: ponding, thin layer.

See footnote at end of table.

TABLE 11.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
65------------------ Candler	Slight*: large stones.	Severe: seepage, large stones.	Severe: seepage, too sandy, large stones.	Severe: seepage.	Poor: seepage, too sandy, large stones.
66------------------ Arredondo	Slight: large stones.	Severe: seepage, large stones.	Severe: too sandy, large stones.	Severe: seepage.	Poor: seepage, too sandy, large stones.
67------------------ Vero	Severe: wetness, percs slowly.	Severe: seepage, wetness.	Severe: wetness.	Severe: seepage, wetness.	Poor: wetness.
68------------------ Chobee	Severe: flooding, wetness, percs slowly.	Severe: flooding.	Severe: flooding, seepage, wetness.	Severe: flooding, wetness.	Poor: wetness.

* Where there are many septic tanks, a hazard of ground water contamination is possible because of poor filtration in the soil.

TABLE 12.--CONSTRUCTION MATERIALS

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "good," "fair," and other terms. Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition; it does not eliminate the need for onsite investigation]

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
1 Arredondo	Good	Probable	Improbable: too sandy.	Poor: too sandy.
3 Astatula	Good	Probable	Improbable: too sandy.	Poor: too sandy.
4, 5 Candler	Good	Probable	Improbable: too sandy.	Poor: too sandy.
6 Kendrick	Good	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy.
8 Lake	Good	Probable	Improbable: too sandy.	Poor: too sandy.
9 Paisley	Poor: low strength, wetness, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy, wetness, large stones.
10 Sparr	Fair: wetness.	Probable	Improbable: too sandy.	Poor: too sandy.
11 Millhopper	Good	Probable	Improbable: too sandy.	Poor: too sandy.
13 Tavares	Good	Probable	Improbable: too sandy.	Poor: too sandy.
14 Lake	Good	Probable	Improbable: too sandy.	Poor: too sandy.
15 Adamsville	Fair: wetness, large stones.	Probable	Improbable: too sandy.	Poor: too sandy, large stones.
16 Apopka	Good	Probable	Improbable: too sandy.	Poor: too sandy.
17: Sumterville	Fair: low strength, shrink-swell, large stones.	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy, large stones.
Mabel	Poor: low strength, shrink-swell, large stones.	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy, large stones.
Tavares	Good	Probable	Improbable: too sandy.	Poor: too sandy, large stones.

TABLE 12.--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
18 Okeelanta	Poor: wetness.	Probable	Improbable: too sandy.	Poor: excess humus, wetness.
19 Apopka	Good	Probable	Improbable: too sandy.	Poor: too sandy.
20 Florahome	Good	Probable	Improbable: too sandy.	Poor: too sandy.
21 EauGallie	Poor: wetness, large stones.	Probable	Improbable: too sandy.	Poor: too sandy, wetness, large stones.
22 Smyrna	Poor: wetness.	Probable	Improbable: too sandy.	Poor: too sandy, wetness.
23 Ona	Poor: wetness.	Probable	Improbable: too sandy.	Poor: too sandy, wetness.
24 Basinger	Poor: wetness.	Probable	Improbable: too sandy.	Poor: too sandy, wetness.
25 Kanapaha	Poor: wetness, large stones.	Probable	Improbable: too sandy.	Poor: too sandy, wetness, large stones.
26 Vero	Poor: wetness, large stones.	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy, wetness, large stones.
27 Sumterville	Fair: low strength, shrink-swell, large stones.	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy, large stones.
28 Seffner	Fair: wetness.	Probable	Improbable: too sandy.	Poor: too sandy.
29 Nittaw	Poor: wetness.	Probable	Improbable: too sandy.	Poor: too clayey, wetness.
30 Placid	Poor: wetness.	Probable	Improbable: too sandy.	Poor: too sandy, wetness.
31 Myakka	Poor: wetness.	Probable	Improbable: too sandy.	Poor: too sandy, wetness.
32 Pompano	Poor: wetness.	Probable	Improbable: too sandy.	Poor: too sandy, wetness.

TABLE 12.--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
33----------------- Sparr	Fair: wetness, large stones.	Probable------------	Improbable: too sandy.	Poor: too sandy, large stones.
34----------------- Tarrytown	Fair: wetness, large stones.	Probable------------	Improbable: too sandy.	Fair: too clayey, large stones.
35----------------- Pompano	Poor: wetness.	Probable------------	Improbable: too sandy.	Poor: too sandy, wetness.
36----------------- Floridana	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy, wetness.
37----------------- Astatula	Good----------------	Probable------------	Improbable: too sandy.	Poor: too sandy.
39----------------- Mabel	Poor: low strength, shrink-swell, large stones.	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy, large stones.
40----------------- Millhopper	Good: large stones.	Probable------------	Improbable: too sandy.	Poor: too sandy, large stones.
41----------------- Everglades	Poor: wetness.	Improbable: excess humus.	Improbable: excess humus.	Poor: excess humus, wetness.
42----------------- Adamsville	Fair: wetness.	Probable------------	Improbable: too sandy.	Poor: too sandy.
43----------------- Basinger	Poor: wetness.	Probable------------	Improbable: too sandy.	Poor: too sandy, wetness.
44----------------- Oldsmar	Poor: wetness, large stones.	Improbable: thin layer.	Improbable: too sandy.	Poor: too sandy, wetness, large stones.
45----------------- Electra	Fair: wetness, large stones.	Probable------------	Improbable: too sandy.	Poor: too sandy, large stones.
46----------------- Ft. Green	Poor: wetness, large stones.	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy, wetness, large stones.
47----------------- Okeelanta	Poor: wetness.	Probable------------	Improbable: too sandy.	Poor: excess humus, wetness.
48----------------- Malabar	Poor: wetness.	Probable------------	Improbable: too sandy.	Poor: too sandy, wetness.

TABLE 12.--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
49 Terra Ceia	Poor: wetness, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: excess humus, wetness.
50 Immokalee	Poor: wetness.	Probable	Improbable: too sandy.	Poor: too sandy, wetness.
51. Pits-Dumps				
52 Candler	Good	Probable	Improbable: too sandy.	Poor: too sandy.
53 Tavares	Good	Probable	Improbable: too sandy.	Poor: too sandy, large stones.
54 Monteocha	Poor: wetness.	Probable	Improbable: too sandy.	Poor: too sandy, wetness.
55 Pomello	Fair: wetness.	Probable	Improbable: too sandy.	Poor: too sandy.
56 Vero	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: area reclaim, too sandy, wetness.
57 Gator	Poor: wetness.	Probable	Improbable: too sandy.	Poor: excess humus, wetness.
58 Paisley	Poor: low strength, wetness, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
59. Arents				
60 Delray	Poor: wetness.	Improbable: thin layer.	Improbable: too sandy.	Poor: too sandy, wetness.
61 EauGallie	Poor: wetness.	Probable	Improbable: too sandy.	Poor: too sandy, wetness.
62. Urban land				
63: Floridana	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy, wetness.
Basinger	Poor: wetness.	Probable	Improbable: too sandy.	Poor: too sandy, wetness.

TABLE 12.--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
64 Gator	Poor: wetness.	Probable	Improbable: too sandy.	Poor: excess humus, wetness.
65 Candler	Good: large stones.	Probable	Improbable: too sandy.	Poor: too sandy, large stones.
66 Arredondo	Good: large stones.	Probable	Improbable: too sandy.	Poor: too sandy, large stones.
67 Vero	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy, wetness.
68 Chobee	Poor: wetness.	Probable	Improbable: too sandy.	Poor: wetness.

TABLE 13.--WATER MANAGEMENT

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not evaluated. The information in this table indicates the dominant soil condition; it does not eliminate the need for onsite investigation]

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
1---------------- Arredondo	Severe: seepage.	Severe: seepage, piping.	Severe: no water.	Deep to water	Droughty, fast intake, soil blowing.	Too sandy, soil blowing.	Droughty.
3---------------- Astatula	Severe: seepage, slope.	Severe: seepage, piping.	Severe: no water.	Deep to water	Droughty, fast intake, soil blowing.	Slope, too sandy, soil blowing.	Slope, droughty.
4, 5------------- Candler	Severe: seepage.	Severe: seepage, piping.	Severe: no water.	Deep to water	Droughty, fast intake, soil blowing.	Too sandy, soil blowing.	Droughty.
6---------------- Kendrick	Severe: seepage.	Slight---------	Severe: no water.	Deep to water	Droughty, fast intake, soil blowing.	Soil blowing---	Droughty, rooting depth.
8---------------- Lake	Severe: seepage.	Severe: seepage.	Severe: no water.	Deep to water	Droughty, fast intake, soil blowing.	Too sandy, soil blowing.	Droughty.
9---------------- Paisley	Slight---------	Severe: wetness, large stones.	Severe: slow refill, large stones.	Percs slowly, large stones.	Wetness, fast intake, soil blowing.	Wetness, percs slowly, large stones.	Wetness, soil blowing, percs slowly.
10--------------- Sparr	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: slow refill, cutbanks cave.	Cutbanks cave	Wetness, droughty, fast intake.	Wetness, too sandy, soil blowing.	Droughty.
11--------------- Millhopper	Severe: seepage.	Severe: seepage, piping.	Severe: no water.	Deep to water	Droughty, fast intake, soil blowing.	Too sandy, soil blowing.	Droughty.
13--------------- Tavares	Severe: seepage.	Severe: seepage, piping.	Severe: cutbanks cave.	Deep to water	Droughty, fast intake, soil blowing.	Too sandy, soil blowing.	Droughty.

TABLE 13.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
14----------------- Lake	Severe: seepage.	Severe: seepage.	Severe: no water.	Deep to water	Droughty, fast intake, soil blowing.	Too sandy, soil blowing.	Droughty.
15----------------- Adamsville	Severe: seepage.	Severe: seepage, piping, large stones.	Severe: cutbanks cave, large stones.	Cutbanks cave, large stones.	Wetness, droughty, fast intake.	Wetness, too sandy, large stones.	Droughty, large stones.
16----------------- Apopka	Severe: seepage.	Severe: seepage, piping.	Severe: no water.	Deep to water	Droughty, fast intake, soil blowing.	Too sandy, soil blowing.	Droughty.
17: Sumterville-------	Severe: seepage.	Moderate: hard to pack, wetness, large stones.	Severe: no water.	Percs slowly, large stones.	Wetness, fast intake, large stones.	Wetness, soil blowing, large stones.	Droughty, percs slowly, large stones.
Mabel-------------	Slight----------	Moderate: hard to pack, wetness, large stones.	Severe: no water.	Percs slowly, large stones.	Large stones, wetness, fast intake.	Large stones, wetness, soil blowing.	Large stones, percs slowly.
Tavares-----------	Severe: seepage.	Severe: seepage, piping, large stones.	Severe: cutbanks cave, large stones.	Deep to water	Droughty, fast intake, soil blowing.	Too sandy, soil blowing, large stones.	Droughty, large stones.
18----------------- Okeelanta	Severe: seepage.	Severe: seepage, piping, ponding.	Severe: cutbanks cave.	Ponding, subsides, cutbanks cave.	Ponding, soil blowing.	Ponding, too sandy, soil blowing.	Wetness.
19----------------- Apopka	Severe: seepage.	Severe: seepage, piping.	Severe: no water.	Deep to water	Droughty, fast intake, soil blowing.	Too sandy, soil blowing.	Droughty.

TABLE 13.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
20---------------- Florahome	Severe: seepage.	Severe: seepage, piping.	Severe: cutbanks cave.	Deep to water	Droughty, fast intake, soil blowing.	Too sandy, soil blowing.	Droughty.
21---------------- EauGallie	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave, large stones.	Cutbanks cave, large stones.	Fast intake, wetness, droughty.	Wetness, too sandy, large stones.	Wetness, droughty, large stones.
22---------------- Smyrna	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Cutbanks cave	Wetness, droughty, fast intake.	Wetness, too sandy, soil blowing.	Wetness, droughty.
23---------------- Ona	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Cutbanks cave	Wetness, droughty, fast intake.	Wetness, too sandy.	Wetness, droughty.
24---------------- Basinger	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Cutbanks cave	Wetness, droughty, fast intake.	Wetness, too sandy, soil blowing.	Wetness, droughty.
25---------------- Kanapaha	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: slow refill, cutbanks cave, large stones.	Cutbanks cave, large stones.	Wetness, droughty, fast intake.	Wetness, too sandy, large stones.	Wetness, droughty, large stones.
26---------------- Vero	Moderate: seepage.	Severe: wetness, large stones.	Severe: slow refill, cutbanks cave, large stones.	Large stones---	Wetness, droughty, fast intake.	Wetness, soil blowing, large stones.	Wetness, droughty, large stones.
27---------------- Sumterville	Severe: seepage.	Moderate: hard to pack, wetness, large stones.	Severe: no water.	Percs slowly, large stones.	Wetness, fast intake, large stones.	Wetness, soil blowing, large stones.	Droughty, percs slowly, large stones.

TABLE 13.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
28---------------- Seffner	Severe: seepage.	Severe: seepage, wetness, piping.	Severe: cutbanks cave.	Cutbanks cave	Wetness, droughty, fast intake.	Wetness, too sandy, soil blowing.	Droughty.
29---------------- Nittaw	Slight---------	Severe: hard to pack, wetness.	Severe: slow refill, cutbanks cave.	Percs slowly, flooding.	Wetness, percs slowly.	Wetness, soil blowing, percs slowly.	Wetness, percs slowly.
30---------------- Placid	Severe: seepage.	Severe: seepage, piping, ponding.	Severe: cutbanks cave.	Ponding, cutbanks cave.	Ponding, fast intake, soil blowing.	Ponding, too sandy, soil blowing.	Wetness.
31---------------- Myakka	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Cutbanks cave	Wetness, droughty, fast intake.	Wetness, too sandy, soil blowing.	Wetness, droughty.
32---------------- Pompano	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Cutbanks cave	Wetness, droughty, fast intake.	Wetness, too sandy, soil blowing.	Wetness, droughty.
33---------------- Sparr	Severe: seepage.	Severe: seepage, wetness, large stones.	Severe: slow refill, cutbanks cave, large stones.	Cutbanks cave, large stones.	Wetness, droughty, fast intake.	Wetness, too sandy, large stones.	Droughty, large stones.
34---------------- Tarrytown	Severe: seepage.	Severe: piping, wetness, large stones.	Severe: cutbanks cave, large stones.	Large stones, percs slowly.	Large stones, wetness, soil blowing.	Large stones, wetness, soil blowing.	Large stones, percs slowly.
35---------------- Pompano	Severe: seepage.	Severe: seepage, piping, ponding.	Severe: cutbanks cave.	Ponding, cutbanks cave.	Ponding, droughty, fast intake.	Ponding, too sandy, soil blowing.	Wetness, droughty.

TABLE 13.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
36--------------- Floridana	Severe: seepage.	Severe: ponding.	Severe: slow refill, cutbanks cave.	Ponding, percs slowly.	Ponding, fast intake, soil blowing.	Ponding, soil blowing, percs slowly.	Wetness, percs slowly.
37--------------- Astatula	Severe: seepage.	Severe: seepage, piping.	Severe: no water.	Deep to water	Droughty, fast intake, soil blowing.	Too sandy, soil blowing.	Droughty.
39--------------- Mabel	Slight---------	Moderate: hard to pack, wetness, large stones.	Severe: no water.	Percs slowly, large stones.	Large stones, wetness, fast intake.	Large stones, wetness, soil blowing.	Large stones, percs slowly.
40--------------- Millhopper	Severe: seepage.	Severe: seepage, large stones.	Severe: no water.	Deep to water, large stones.	Droughty, fast intake, large stones.	Too sandy, soil blowing, large stones.	Droughty, large stones.
41--------------- Everglades	Severe: seepage.	Severe: excess humus, wetness.	Slight---------	Flooding, subsides.	Wetness, soil blowing, flooding.	Wetness, soil blowing.	Wetness.
42--------------- Adamsville	Severe: seepage.	Severe: seepage, piping.	Severe: cutbanks cave.	Cutbanks cave	Wetness, droughty, fast intake.	Wetness, too sandy, soil blowing.	Droughty.
43--------------- Basinger	Severe: seepage.	Severe: seepage, piping, ponding.	Severe: cutbanks cave.	Ponding, cutbanks cave.	Ponding, droughty, fast intake.	Ponding, too sandy, soil blowing.	Wetness, droughty.
44--------------- Oldsmar	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: slow refill, large stones.	Cutbanks cave, large stones.	Wetness, droughty, fast intake.	Wetness, too sandy, large stones.	Wetness, droughty, large stones.
45--------------- Electra	Severe: seepage.	Severe: seepage, piping, large stones.	Severe: slow refill, cutbanks cave, large stones.	Cutbanks cave, large stones.	Large stones, wetness, droughty.	Large stones, wetness, soil blowing.	Large stones, droughty.

TABLE 13.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
46---------------- Ft. Green	Severe: seepage.	Severe: wetness, large stones.	Severe: slow refill, cutbanks cave, large stones.	Percs slowly, large stones.	Large stones, wetness, fast intake.	Large stones, wetness, soil blowing.	Wetness, large stones.
47---------------- Okeelanta	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Flooding, subsides, cutbanks cave.	Flooding, wetness, soil blowing.	Wetness, soil blowing, too sandy.	Wetness.
48---------------- Malabar	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Flooding, cutbanks cave.	Wetness, droughty, fast intake.	Wetness, too sandy, soil blowing.	Wetness, droughty.
49---------------- Terra Ceia	Severe: seepage.	Severe: excess humus, wetness.	Slight---------	Flooding, subsides.	Wetness, soil blowing, flooding.	Wetness, soil blowing.	Wetness.
50---------------- Immokalee	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Cutbanks cave	Wetness, droughty, fast intake.	Wetness, too sandy, soil blowing.	Wetness, droughty.
51. Pits-Dumps							
52---------------- Candler	Severe: seepage, slope.	Severe: seepage, piping.	Severe: no water.	Deep to water	Droughty, fast intake, soil blowing.	Slope, too sandy, soil blowing.	Slope, droughty.
53---------------- Tavares	Severe: seepage.	Severe: seepage, piping, large stones.	Severe: cutbanks cave, large stones.	Deep to water	Droughty, fast intake, soil blowing.	Too sandy, soil blowing, large stones.	Droughty, large stones.

TABLE 13.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
54----------------- Monteocha	Severe: seepage.	Severe: seepage, piping, ponding.	Severe: cutbanks cave.	Ponding, cutbanks cave.	Ponding, fast intake, soil blowing.	Ponding, too sandy, soil blowing.	Wetness.
55----------------- Pomello	Severe: seepage.	Severe: seepage, piping.	Severe: cutbanks cave.	Cutbanks cave	Wetness, droughty, fast intake.	Wetness, too sandy, soil blowing.	Droughty.
56----------------- Vero	Severe: seepage.	Severe: piping, ponding.	Severe: slow refill, cutbanks cave.	Ponding, percs slowly.	Ponding, droughty, fast intake.	Ponding, soil blowing, percs slowly.	Wetness, droughty, rooting depth.
57----------------- Gator	Severe: seepage.	Severe: excess humus, wetness.	Severe: cutbanks cave.	Flooding, subsides.	Wetness, flooding, soil blowing.	Wetness, soil blowing.	Wetness.
58----------------- Paisley	Slight---------	Severe: ponding.	Severe: slow refill.	Ponding, percs slowly.	Ponding, fast intake, soil blowing.	Ponding, soil blowing, percs slowly.	Wetness, percs slowly.
59. Arents							
60----------------- Delray	Severe: seepage.	Severe: seepage, ponding.	Severe: cutbanks cave.	Ponding, cutbanks cave.	Ponding, droughty, fast intake.	Ponding, too sandy, soil blowing.	Wetness, droughty.
61----------------- EauGallie	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Cutbanks cave	Fast intake, wetness, droughty.	Wetness, too sandy, soil blowing.	Wetness, droughty.
62. Urban land							

TABLE 13.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
63: Floridana	Severe: seepage.	Severe: wetness.	Severe: slow refill, cutbanks cave.	Percs slowly, flooding.	Wetness, fast intake, soil blowing.	Wetness, soil blowing, percs slowly.	Wetness, percs slowly.
Basinger	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Flooding, cutbanks cave.	Wetness, droughty, fast intake.	Wetness, too sandy, soil blowing.	Wetness, droughty.
64 Gator	Severe: seepage.	Severe: piping, ponding.	Severe: slow refill, cutbanks cave.	Ponding, percs slowly, subsides.	Ponding, soil blowing, percs slowly.	Ponding, soil blowing, percs slowly.	Wetness, percs slowly.
65 Candler	Severe: seepage.	Severe: seepage, piping, large stones.	Severe: no water.	Deep to water	Droughty, fast intake, large stones.	Too sandy, soil blowing, large stones.	Droughty, large stones.
66 Arredondo	Severe: seepage.	Severe: seepage, piping, large stones.	Severe: no water.	Deep to water	Droughty, fast intake, large stones.	Large stones, too sandy, soil blowing.	Droughty, large stones.
67 Vero	Slight	Severe: piping, wetness.	Severe: slow refill, cutbanks cave.	Percs slowly	Wetness, droughty, fast intake.	Wetness, soil blowing, percs slowly.	Wetness, droughty, rooting depth.
68 Chobee	Slight	Severe: wetness.	Severe: slow refill, cutbanks cave.	Percs slowly, flooding.	Wetness, fast intake, soil blowing.	Wetness, soil blowing, percs slowly.	Wetness, rooting depth, percs slowly.

TABLE 14.--ENGINEERING INDEX PROPERTIES

[The symbol < means less than; > means more than. Absence of an entry indicates that data were not estimated. Some soils may have Unified classifications and USDA textures in addition to those shown. In general, the dominant classifications and textures are shown, and the others are inferred]

Map symbol and soil name	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
1---------------- Arredondo	0-37	Fine sand, loamy fine sand.	SP-SM, SM	A-2-4, A-3	0	95-100	90-100	75-95	5-15	---	NP
	37-57	Loamy sand, loamy fine sand, sandy loam.	SM, SM-SC	A-2-4	0	95-100	90-100	75-95	13-25	<25	NP-7
	57-63	Sandy loam, fine sandy loam, sandy clay loam.	SC, SM-SC	A-2-4, A-2-6, A-4, A-6	0	95-100	90-100	85-95	20-40	<40	NP-20
	63-80	Fine sandy loam, sandy clay loam, sandy clay.	SC, SM-SC	A-2-4, A-2-6, A-4, A-6	0	95-100	90-100	85-95	25-45	<40	NP-20
3---------------- Astatula	0-3	Fine sand--------	SP, SP-SM	A-3	0	100	100	75-99	1-7	---	NP
	3-80	Sand, fine sand	SP, SP-SM	A-3	0	100	100	75-99	1-7	---	NP
4---------------- Candler	0-8	Sand-------------	SP, SP-SM	A-3	0	100	95-100	60-100	2-8	---	NP
	8-50	Sand, fine sand	SP, SP-SM	A-3	0	100	95-100	60-100	2-8	---	NP
	50-80	Sand, fine sand	SP-SM	A-3, A-2-4	0	100	95-100	60-100	5-12	---	NP
5---------------- Candler	0-6	Sand-------------	SP, SP-SM	A-3	0	100	95-100	60-100	2-8	---	NP
	6-56	Sand, fine sand	SP, SP-SM	A-3	0	100	95-100	60-100	2-8	---	NP
	56-80	Sand, fine sand	SP-SM	A-3, A-2-4	0	100	95-100	60-100	5-12	---	NP
6---------------- Kendrick	0-33	Fine sand, loamy fine sand.	SP-SM, SM	A-3, A-2-4	0	95-100	90-100	75-100	5-19	---	NP
	33-68	Sandy clay loam, fine sandy loam, sandy loam.	SC, SM-SC	A-2-6, A-2-4	0	95-100	90-100	85-100	25-35	20-35	4-18
	68-80	Sandy clay loam, sandy clay.	SC	A-2-6, A-6	0	95-100	90-100	85-100	25-45	25-40	9-20
8---------------- Lake	0-80	Fine sand, sand	SP-SM	A-3, A-2-4	0	100	100	85-98	5-12	---	NP
9---------------- Paisley	0-16	Fine sand--------	SP-SM, SM	A-2-4, A-3	0-1	98-100	98-100	75-95	5-14	---	NP
	16-25	Sandy clay loam, sandy clay.	SC	A-6, A-7	0-1	95-100	95-100	90-98	40-50	35-45	15-25
	25-60	Sandy clay, clay	CH, CL	A-7	0-5	95-100	95-100	75-95	51-70	41-73	16-40
10--------------- Sparr	0-9	Fine sand--------	SP-SM, SM	A-3, A-2-4	0	100	100	75-99	5-14	---	NP
	9-45	Sand, fine sand	SP-SM, SM	A-3, A-2-4	0	100	100	75-99	5-14	---	NP
	45-51	Sandy loam, sandy clay loam, fine sandy loam.	SM-SC, SC, SM	A-2-4	0	100	100	75-99	25-35	<30	NP-10
	51-80	Sandy clay, sandy clay loam, sandy loam.	SC, SM-SC	A-2, A-4, A-6, A-7	0	100	95-100	75-99	28-50	22-43	5-26

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
11 Millhopper	0-50	Sand, fine sand	SP-SM, SM	A-3, A-2-4	0	100	97-100	75-95	5-20	---	NP
	50-80	Sandy loam, fine sandy loam, sandy clay loam.	SM, SM-SC, SC	A-2-4, A-2-6, A-4, A-6	0	100	97-100	75-97	18-40	<33	NP-18
13 Tavares	0-8	Fine sand	SP, SP-SM	A-3	0	100	95-100	85-100	2-10	---	NP
	8-80	Sand, fine sand	SP, SP-SM	A-3	0	100	95-100	85-100	2-10	---	NP
14 Lake	0-80	Fine sand, sand	SP-SM	A-3, A-2-4	0	100	100	85-98	5-12	---	NP
15 Adamsville	0-5	Fine sand	SP-SM	A-3, A-2-4	1-3	100	100	90-100	5-12	---	NP
	5-80	Fine sand, sand	SP-SM, SP	A-3, A-2-4	1-3	100	100	90-100	2-12	---	NP
16 Apopka	0-54	Fine sand, sand	SP, SP-SM	A-3	0	100	100	85-100	3-10	---	NP
	54-80	Sandy loam, sandy clay loam, sandy clay.	SM-SC, SC	A-2-4, A-2-6, A-4, A-6	0	98-100	95-100	60-95	20-40	20-40	4-20
17: Sumterville	0-7	Fine sand	SP-SM, SM	A-3, A-2-4	1-6	100	100	80-95	5-15	---	NP
	7-25	Sand, fine sand	SP-SM, SM	A-3, A-2-4	1-6	100	100	80-95	5-15	---	NP
	25-80	Sandy clay, clay	CL, CH	A-7	0-1	100	95-100	90-100	48-70	41-55	25-35
Mabel	0-6	Fine sand	SP-SM, SP, SM	A-2-4, A-3	0-1	98-100	98-100	95-100	3-23	---	NP
	6-14	Sandy clay loam, sandy clay.	SC, CL, CH	A-6, A-7, A-2	0-1	95-100	95-100	95-100	30-55	30-55	15-40
	14-52	Sandy clay, clay	CH, MH	A-7	0-5	95-100	95-100	90-100	60-80	50-80	20-50
	52-80	Sandy clay loam, clay loam, clay.	SC, CH, CL	A-6, A-7	5-10	90-99	75-95	65-80	40-70	35-65	15-40
Tavares	0-8	Fine sand	SP, SP-SM	A-3	0-3	100	85-100	85-100	2-10	---	NP
	8-80	Sand, fine sand	SP, SP-SM	A-3	0-3	100	85-100	85-100	2-10	---	NP
18 Okeelanta	0-38	Muck	PT	A-8	0	---	---	---	---	---	---
	38-80	Fine sand, sand, loamy sand.	SP, SP-SM, SM	A-3, A-2-4	0	100	85-100	80-95	2-15	---	NP
19 Apopka	0-45	Fine sand, sand	SP, SP-SM	A-3	0	100	100	85-100	3-10	---	NP
	45-80	Sandy loam, sandy clay loam, sandy clay.	SM-SC, SC	A-2-4, A-2-6, A-4, A-6	0	98-100	95-100	60-95	20-40	20-40	4-20
20 Florahome	0-20	Sand	SP, SP-SM	A-3, A-2-4	0	100	100	85-100	1-12	---	NP
	20-80	Sand, fine sand	SP, SP-SM	A-3, A-2-4	0	100	100	85-100	1-12	---	NP

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Frag- ments > 3 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
21--------------- EauGallie	0-8	Fine sand--------	SP	A-3	1-3	100	100	80-98	2-5	---	NP
	8-25	Sand, fine sand	SP	A-3	1-3	100	100	80-98	2-5	---	NP
	25-36	Sand, fine sand	SP-SM, SM	A-3, A-2-4	1-3	100	100	80-98	5-20	---	NP
	36-57	Sand, fine sand	SP, SP-SM	A-3, A-2-4	1-3	100	100	80-98	2-12	---	NP
	57-80	Sandy loam, fine sandy loam, sandy clay loam.	SM, SM-SC, SC	A-2-4, A-2-6	1-3	100	100	80-98	20-35	<40	NP-16
22--------------- Smyrna	0-15	Fine sand, sand	SP, SP-SM	A-3, A-2-4	0	100	100	80-100	2-12	---	NP
	15-28	Sand, fine sand, loamy fine sand.	SM, SP-SM	A-3, A-2-4	0	100	100	80-100	5-20	---	NP
	28-80	Sand, fine sand	SP, SP-SM	A-3	0	100	100	80-100	2-10	---	NP
23--------------- Ona	0-9	Fine sand--------	SP-SM, SP	A-3	0	100	100	85-95	3-10	---	NP
	9-20	Fine sand, sand	SP-SM, SM	A-3, A-2-4	0	100	100	85-95	5-20	---	NP
	20-80	Fine sand, sand	SP-SM, SP	A-3	0	100	100	85-95	3-10	---	NP
24--------------- Basinger	0-8	Fine sand--------	SP	A-3	0	100	100	85-100	1-4	---	NP
	8-27	Sand, fine sand	SP, SP-SM	A-3, A-2-4	0	100	100	85-100	2-12	---	NP
	27-45	Sand, fine sand	SP, SP-SM	A-3, A-2-4	0	100	100	85-100	2-12	---	NP
	45-80	Sand, fine sand	SP, SP-SM	A-3, A-2-4	0	100	100	85-100	2-12	---	NP
25--------------- Kanapaha	0-3	Sand-------------	SP-SM	A-3, A-2-4	1-3	95-100	90-100	75-95	5-12	---	NP
	3-55	Sand, fine sand	SP-SM	A-3, A-2-4	1-3	95-100	90-100	75-95	5-12	---	NP
	55-80	Fine sandy loam, sandy clay loam, sandy clay.	SC, SM-SC	A-2-4, A-4, A-6	0	95-100	90-100	80-95	25-45	19-40	6-22
26--------------- Vero	0-4	Fine sand--------	SP-SM	A-3, A-2-4	1-3	100	100	90-99	5-12	---	NP
	4-15	Sand, fine sand	SP-SM	A-3, A-2-4	0-3	100	100	90-99	5-12	---	NP
	15-21	Sand, fine sand, loamy fine sand.	SP-SM, SM	A-2-4, A-3	0-3	100	100	90-99	5-25	---	NP
	21-60	Sandy clay loam, sandy clay.	SC, CL, CH	A-7, A-6, A-2-6, A-2-7	0-3	100	100	90-100	30-60	35-60	20-40
	60-80	Fine sandy loam, sandy loam, sandy clay loam.	SM-SC, SC, SM	A-6, A-4, A-2-4, A-2-6	0-3	100	100	90-100	25-50	<40	NP-15
27--------------- Sumterville	0-9	Fine sand--------	SP-SM, SM	A-3, A-2-4	1-6	100	100	80-95	5-15	---	NP
	9-29	Sand, fine sand	SP-SM, SM	A-3, A-2-4	1-6	100	100	80-95	5-15	---	NP
	29-80	Sandy clay, clay	CL, CH	A-7	0-1	100	95-100	90-100	48-70	41-55	25-35

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
28---------------- Seffner	0-12	Fine sand--------	SP-SM, SP	A-3, A-2-4	0	100	100	85-100	1-12	---	NP
	12-18	Fine sand, sand	SP-SM, SP	A-3, A-2-4	0	100	100	85-100	1-12	---	NP
	18-80	Fine sand, sand	SP-SM, SP	A-3, A-2-4	0	97-100	75-100	70-100	1-12	---	NP
29---------------- Nittaw	0-5	Muck-------------	PT	---	---	---	---	---	---	---	---
	5-12	Sand, fine sand, mucky fine sand.	SP-SM, SM	A-3, A-2-4	0	100	100	85-100	5-20	---	NP
	12-65	Sandy clay, clay	CH, CL	A-7	0	100	100	85-100	51-70	40-80	21-50
	65-80	Sand, fine sand, fine sandy loam.	SP, SP-SM, SM, SM-SC	A-3, A-2-4	0	100	100	85-100	4-25	<28	NP-7
30---------------- Placid	0-16	Fine sand--------	SP, SP-SM, SM	A-3, A-2-4	0	100	100	90-100	1-20	---	NP
	16-80	Sand, fine sand, loamy fine sand.	SP, SP-SM, SM	A-3, A-2-4	0	100	100	90-100	1-20	---	NP
31---------------- Myakka	0-25	Sand, fine sand	SP, SP-SM	A-3	0	100	100	85-100	2-10	---	NP
	25-40	Sand, fine sand, loamy fine sand.	SM, SP-SM	A-3, A-2-4	0	100	100	85-100	5-20	---	NP
	40-80	Sand, fine sand	SP, SP-SM	A-3	0	100	100	85-100	2-8	---	NP
32---------------- Pompano	0-80	Fine sand, sand	SP, SP-SM	A-3, A-2-4	0	100	100	75-100	1-12	---	NP
33---------------- Sparr	0-8	Fine sand, sand	SP-SM	A-3, A-2-4	1-3	98-100	95-100	75-95	5-12	---	NP
	8-46	Sand, fine sand	SP-SM	A-3, A-2-4	1-3	98-100	95-100	75-95	5-12	---	NP
	46-58	Fine sandy loam, sandy loam, sandy clay loam.	SM, SC, SM-SC	A-2-4	0	98-100	95-100	75-95	25-35	<30	NP-10
	58-80	Sandy clay, sandy clay loam.	SC, SM-SC	A-2-4, A-2-6, A-4, A-6	0	98-100	95-100	75-95	30-50	22-40	5-15
34---------------- Tarrytown	0-7	Sandy clay loam	SM	A-2-4	1-3	97-100	97-100	70-85	20-30	<40	NP-7
	7-14	Fine sandy loam, sandy clay loam.	SC, CH, CL	A-4, A-6, A-7	1-3	98-100	97-100	80-98	40-60	24-58	8-40
	14-50	Fine sandy loam, clay loam, loam.	SC, CL, SM-SC, CL-ML	A-4	1-3	98-100	97-100	70-85	40-60	18-30	4-10
	50-80	Fine sand, sand	SP-SM, SP	A-3, A-2-4	0-1	98-100	97-100	50-70	3-12	---	NP
35---------------- Pompano	0-80	Fine sand, sand	SP, SP-SM	A-3, A-2-4	0	100	100	75-100	1-12	---	NP
36---------------- Floridana	0-12	Mucky fine sand, fine sand.	SP-SM, SM	A-3, A-2-4	0	100	100	80-90	5-25	---	NP
	12-25	Sand, fine sand	SP, SP-SM	A-3	0	100	100	80-90	2-10	---	NP
	25-80	Sandy loam, fine sandy loam, sandy clay loam.	SM-SC, SC	A-2-4, A-2-6	0	100	100	85-95	20-35	20-40	7-16
37---------------- Astatula	0-5	Fine sand--------	SP, SP-SM	A-3	0	100	100	75-99	1-7	---	NP
	5-80	Sand, fine sand	SP, SP-SM	A-3	0	100	100	75-99	1-7	---	NP

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
39---------------- Mabel	0-16	Fine sand--------	SP-SM, SP, SM	A-2-4, A-3	0-1	98-100	98-100	95-100	3-23	---	NP
	16-24	Sandy clay loam, sandy clay.	SC, CL, CH	A-6, A-7, A-2	0-1	95-100	95-100	95-100	30-55	30-55	15-40
	24-30	Sandy clay, clay	CH, MH	A-7	0-5	95-100	95-100	90-100	60-80	50-80	20-50
	30-80	Sandy clay loam, clay loam, clay.	SC, CH, CL	A-6, A-7	5-10	90-99	75-95	65-80	40-70	35-65	15-40
40---------------- Millhopper	0-7	Sand-------------	SP-SM	A-3, A-2-4	1-3	98-100	97-100	75-95	5-12	---	NP
	7-45	Sand, fine sand	SP-SM	A-3, A-2-4	1-3	98-100	97-100	75-95	5-12	---	NP
	45-80	Sandy loam, fine sandy loam, sandy clay loam.	SM, SM-SC, SC	A-2-4, A-4, A-2-6, A-6	0	98-100	97-100	75-97	18-40	<33	NP-18
41---------------- Everglades	0-8	Muck-------------	PT	A-8	0	---	---	---	---	---	---
	8-28	Mucky peat-------	PT	A-8	0	---	---	---	---	---	---
	28-80	Peat, mucky peat, muck.	PT	A-8	0	---	---	---	---	---	---
42---------------- Adamsville	0-8	Fine sand, sand	SP-SM	A-3, A-2-4	0	100	100	90-100	5-12	---	NP
	8-80	Fine sand, sand	SP-SM, SP	A-3, A-2-4	0	100	100	90-100	2-12	---	NP
43---------------- Basinger	0-6	Fine sand--------	SP	A-3	0	100	100	85-100	1-4	---	NP
	6-15	Sand, fine sand	SP, SP-SM	A-3, A-2-4	0	100	100	85-100	2-12	---	NP
	15-30	Sand, fine sand	SP, SP-SM	A-3, A-2-4	0	100	100	85-100	2-12	---	NP
	30-80	Sand, fine sand	SP, SP-SM	A-3, A-2-4	0	100	100	85-100	2-12	---	NP
44---------------- Oldsmar	0-31	Fine sand--------	SP, SP-SM	A-3	0-3	100	100	80-100	2-10	---	NP
	31-48	Sand, fine sand, loamy fine sand.	SP-SM, SM	A-2-4, A-3	0	100	100	80-100	5-20	---	NP
	48-80	Fine sandy loam, sandy loam, sandy clay loam.	SM-SC, SC	A-2, A-4 A-6, A-7	0	100	100	85-100	20-37	20-41	5-29
45---------------- Electra	0-3	Fine sand--------	SP, SP-SM	A-3	0-2	100	95-100	75-99	3-10	---	NP
	3-35	Sand, fine sand	SP, SP-SM	A-3	0	100	95-100	75-99	3-10	---	NP
	35-40	Sand, fine sand	SP-SM, SM	A-3, A-2-4	0	100	100	80-99	8-15	---	NP
	40-46	Sand, fine sand	SP, SP-SM	A-3	0	100	100	75-99	3-10	---	NP
	46-80	Fine sandy loam, sandy clay loam, sandy clay.	SC, SM-SC	A-2, A-4, A-6	0	100	100	80-99	20-45	20-40	4-20

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
46---------------- Ft. Green	0-28	Fine sand, sand	SP-SM, SM	A-3, A-2-4	0-2	100	100	95-100	7-17	---	NP
	28-38	Sandy clay loam, fine sandy loam.	SC, SM-SC, SM	A-2-6, A-6, A-2-4, A-4	0	100	100	95-100	20-40	<40	NP-15
	38-58	Sandy clay loam, sandy clay.	SC	A-2-6, A-6, A-4, A-7-6	5-10	100	100	95-100	30-50	20-60	8-30
	58-80	Cobbly sandy clay loam, fine sandy loam.	SC, SM-SC, SM	A-2-6, A-6, A-2-4, A-4	10-20	100	100	95-100	20-40	<40	NP-15
47---------------- Okeelanta	0-19	Muck-------------	PT	A-8	0	---	---	---	---	---	---
	19-80	Fine sand, sand, loamy sand.	SP, SP-SM, SM	A-3, A-2-4	0	100	85-100	80-95	2-15	---	NP
48---------------- Malabar	0-6	Fine sand--------	SP, SP-SM	A-3	0	100	100	80-90	2-10	---	NP
	6-48	Sand, fine sand	SP, SP-SM	A-3, A-2-4	0	100	100	80-90	3-12	---	NP
	48-80	Fine sandy loam, sandy loam, sandy clay loam.	SC, SM-SC	A-2, A-4, A-6	0	100	100	80-90	22-40	20-40	4-15
49---------------- Terra Ceia	0-80	Muck-------------	PT	A-8	---	---	---	---	---	---	---
50---------------- Immokalee	0-5	Sand-------------	SP, SP-SM	A-3	0	100	100	70-100	2-10	---	NP
	5-34	Fine sand, sand	SP, SP-SM	A-3	0	100	100	70-100	2-10	---	NP
	34-46	Fine sand, sand	SP-SM, SM	A-3, A-2-4	0	100	100	70-100	5-21	---	NP
	46-80	Fine sand, sand	SP, SP-SM	A-3	0	100	100	70-100	2-10	---	NP
51. Pits-Dumps											
52---------------- Candler	0-5	Sand-------------	SP, SP-SM	A-3	0	100	95-100	60-100	2-8	---	NP
	5-52	Sand, fine sand	SP, SP-SM	A-3	0	100	95-100	60-100	2-8	---	NP
	52-80	Sand, fine sand	SP-SM	A-3, A-2-4	0	100	95-100	60-100	5-12	---	NP
53---------------- Tavares	0-7	Fine sand--------	SP, SP-SM	A-3	0-3	100	85-100	85-100	2-10	---	NP
	7-80	Sand, fine sand	SP, SP-SM	A-3	0-3	100	85-100	85-100	2-10	---	NP
54---------------- Monteocha	0-11	Fine sand--------	SP-SM, SM	A-3, A-2-4	0	100	100	80-95	5-23	---	NP
	11-65	Sand, fine sand	SP, SP-SM, SM	A-3, A-2-4	0	100	100	80-90	3-15	---	NP
	65-80	Fine sandy loam, sandy loam, sandy clay loam.	SM, SM-SC, SC	A-2-4, A-2-6	0	100	100	75-100	16-35	<35	NP-12
55---------------- Pomello	0-40	Fine sand, sand	SP, SP-SM	A-3	0	100	100	60-100	1-8	---	NP
	40-56	Coarse sand, sand, fine sand.	SP-SM, SM	A-3, A-2-4	0	100	100	60-100	6-15	---	NP
	56-80	Coarse sand, sand, fine sand.	SP, SP-SM	A-3	0	100	100	60-100	4-10	---	NP

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TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Frag- ments > 3 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
56---------------- Vero	0-17	Fine sand, sand	SP-SM, SM	A-3, A-2-4	0	100	100	70-100	5-25	---	NP
	17-33	Sand, fine sand, loamy fine sand.	SM	A-2-4	0	100	100	70-100	13-25	---	NP
	33-60	Sandy clay loam, fine sandy loam.	SM, SM-SC, SC	A-2-4, A-2-6, A-6, A-4	0	100	100	60-100	30-50	<40	NP-25
	60-80	Fine sandy loam	SM, SC, SM-SC	A-2-4, A-2-6, A-6, A-4	0	100	100	70-100	13-40	<40	NP-15
57---------------- Gator	0-25	Muck-------------	PT	A-8	---	---	---	---	---	---	---
	25-40	Sandy clay loam, sandy loam, fine sandy loam.	SC, SM-SC	A-2, A-4, A-6	0	100	95-100	80-95	20-50	20-40	4-20
	40-60	Stratified loamy fine sand to fine sandy loam.	SM	A-2-4	0	100	100	80-99	13-20	---	NP
	60-80	Fine sand, sand	SP-SM	A-3, A-2-4	0	100	100	80-99	5-12	---	NP
58---------------- Paisley	0-13	Fine sand--------	SP-SM	A-2-4, A-3	0	100	100	80-99	6-12	---	NP
	13-80	Sandy clay, clay	CH, CL	A-7	0	95-100	90-100	75-95	51-70	41-51	25-35
59. Arents											
60---------------- Delray	0-16	Fine sand--------	SP-SM, SM, SM-SC	A-3, A-2-4	0	100	100	95-100	5-20	<20	NP-5
	16-60	Fine sand, sand	SP-SM	A-3, A-2-4	0	100	100	95-100	5-12	---	NP
	60-80	Sandy loam, fine sandy loam, sandy clay loam.	SM, SM-SC, SC	A-2-4, A-2-6	0	100	100	95-100	20-35	<40	NP-15
61---------------- EauGallie	0-21	Fine sand, sand	SP, SP-SM	A-3	0	100	100	80-98	2-5	---	NP
	21-34	Sand, fine sand	SP-SM, SM	A-3, A-2-4	0	100	100	80-98	5-20	---	NP
	34-50	Sand, fine sand	SP, SP-SM	A-3, A-2-4	0	100	100	80-98	2-12	---	NP
	50-65	Sandy loam, fine sandy loam, sandy clay loam.	SM, SM-SC, SC	A-2-4, A-2-6	0	100	100	80-98	20-35	<40	NP-20
	65-80	Sand, loamy sand, loamy fine sand.	SP-SM, SM	A-3, A-2-4	0	100	100	80-98	5-25	---	NP
62. Urban land											
63: Floridana--------	0-11	Fine sand--------	SP-SM, SM	A-3, A-2-4	0	100	100	80-90	5-25	---	NP
	11-26	Fine sand, sand	SP, SP-SM	A-3	0	100	100	85-95	2-10	---	NP
	26-80	Sandy loam, fine sandy loam, sandy clay loam.	SM-SC, SC	A-2-4, A-2-6	0	100	100	80-95	15-35	20-30	7-16

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
63: Basinger	0-22	Fine sand, sand	SP	A-3	0	100	100	85-100	1-4	---	NP
	22-40	Sand, fine sand	SP, SP-SM	A-3, A-2-4	0	100	100	85-100	2-12	---	NP
	40-80	Sand, fine sand	SP, SP-SM	A-3, A-2-4	0	100	100	85-100	2-12	---	NP
64 Gator	0-38	Muck	PT	A-8	0	---	---	---	---	---	---
	38-42	Fine sand, loamy sand, loamy fine sand.	SP-SM	A-3, A-2-4	0	100	100	85-100	5-12	---	NP
	42-80	Loam, fine sandy loam, sandy clay loam.	SM-SC, SC, SM	A-2-4, A-2-6	0	100	100	80-99	25-35	<40	NP-15
65 Candler	0-3	Sand	SP, SP-SM	A-3	0-1	100	95-100	60-100	2-8	---	NP
	3-65	Sand, fine sand	SP, SP-SM	A-3	0-1	100	95-100	60-100	2-8	---	NP
	65-80	Sand, fine sand	SP-SM	A-3, A-2-4	0-1	100	95-100	60-100	5-12	---	NP
66 Arredondo	0-58	Fine sand, loamy fine sand.	SP-SM, SM	A-2-4, A-3	1-3	95-100	90-100	75-95	5-15	---	NP
	58-65	Loamy sand, loamy fine sand, sandy loam.	SM, SM-SC	A-2-4	0-3	95-100	90-100	75-95	13-25	<25	NP-7
	65-80	Sandy loam, fine sandy loam, sandy clay loam.	SC, SM-SC, SM	A-2-4, A-2-6, A-4, A-6	0-1	95-100	90-100	85-95	20-40	<40	NP-20
67 Vero	0-21	Fine sand, sand	SP-SM, SM	A-3, A-2-4	0	100	100	70-100	5-25	---	NP
	21-32	Sand, fine sand, loamy fine sand.	SM	A-2-4	0	100	100	70-100	13-25	---	NP
	32-65	Sandy loam, fine sandy loam, sandy clay loam.	SM, SM-SC, SC	A-2-4, A-2-6, A-6, A-4	0	100	100	60-100	30-50	<40	NP-25
	65-80	Fine sandy loam, loamy fine sand, loamy sand.	SM, SM-SC, SC	A-2-4, A-2-6, A-6, A-4	0	100	100	70-100	13-40	<40	NP-15
68 Chobee	0-6	Loamy fine sand	SP-SM, SM	A-2-4	0	100	100	85-99	12-25	<40	NP-10
	6-41	Sandy clay loam	SC	A-2-6, A-2-7, A-6, A-7	0	100	100	85-99	25-45	35-45	20-25
	41-80	Loamy sand, fine sand, sandy clay loam.	SP-SM, SM, SC, SM-SC	A-2-4, A-2-6, A-6, A-7	0	100	100	80-99	12-45	<45	NP-25

TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS

[The symbol < means less than; > means more than. Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Organic matter" apply only to the surface layer. Absence of an entry indicates that data were not available or were not estimated]

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Wind erodi-bility group	Organic matter
								K	T		
	In	Pct	G/cc	In/hr	In/in	pH					Pct
1---------------- Arredondo	0-37	5-12	1.25-1.65	6.0-20	0.05-0.10	4.5-6.0	Low----------	0.10	5	2	<2
	37-57	10-18	1.45-1.60	2.0-6.0	0.08-0.15	4.5-6.0	Low----------	0.20			
	57-63	15-25	1.55-1.70	0.6-6.0	0.12-0.17	4.5-6.0	Low----------	0.24			
	63-80	15-40	1.55-1.70	0.04-0.6	0.15-0.20	4.5-6.0	Low----------	0.24			
3---------------- Astatula	0-3	1-3	1.25-1.50	>20	0.04-0.10	4.5-6.5	Low----------	0.10	5	2	.5-2
	3-80	1-3	1.45-1.60	>20	0.02-0.05	4.5-6.5	Low----------	0.10			
4---------------- Candler	0-8	<3	1.35-1.55	6.0-20	0.04-0.08	4.5-6.0	Low----------	0.10	5	2	.5-2
	8-50	<3	1.50-1.65	6.0-20	0.02-0.06	4.5-6.0	Low----------	0.10			
	50-80	3-8	1.50-1.65	6.0-20	0.05-0.08	4.5-6.0	Low----------	0.10			
5---------------- Candler	0-6	<3	1.35-1.55	6.0-20	0.04-0.08	4.5-6.0	Low----------	0.10	5	2	.5-2
	6-56	<3	1.50-1.65	6.0-20	0.02-0.06	4.5-6.0	Low----------	0.10			
	56-80	3-8	1.50-1.65	6.0-20	0.05-0.08	4.5-6.0	Low----------	0.10			
6---------------- Kendrick	0-33	1-7	1.25-1.50	6.0-20	0.05-0.07	4.5-6.0	Low----------	0.10	5	2	<2
	33-68	15-25	1.55-1.70	0.6-6.0	0.10-0.15	4.5-6.0	Low----------	0.24			
	68-80	20-40	1.55-1.75	0.06-2.0	0.12-0.20	4.5-6.0	Low----------	0.32			
8---------------- Lake	0-80	1-3	1.45-1.65	>6.0	0.03-0.08	4.5-5.5	Low----------	0.10	5	2	.5-1
9---------------- Paisley	0-16	2-8	1.45-1.55	2.0-20	0.10-0.15	5.1-6.5	Low----------	0.10	5	2	1-4
	16-25	15-35	1.60-1.70	0.06-2.0	0.13-0.18	5.1-6.5	High---------	0.28			
	25-80	40-60	1.55-1.70	0.06-2.0	0.15-0.18	6.1-7.3	High---------	0.28			
10--------------- Sparr	0-9	1-5	1.20-1.50	6.0-20	0.08-0.12	3.6-6.5	Low----------	0.10	5	2	<3
	9-45	1-5	1.45-1.70	6.0-20	0.05-0.08	3.6-6.5	Low----------	0.10			
	45-51	15-32	1.55-1.80	0.6-2.0	0.10-0.15	3.6-6.5	Low----------	0.20			
	51-80	12-38	1.55-1.80	0.06-0.6	0.10-0.18	3.6-6.5	Low----------	0.24			
11--------------- Millhopper	0-50	2-8	1.50-1.67	6.0-20	0.05-0.10	4.5-6.5	Low----------	0.10	5	2	.5-2
	50-80	12-28	1.80-1.90	0.06-2.0	0.08-0.15	4.5-6.0	Low----------	0.28			
13--------------- Tavares	0-8	0-4	1.25-1.60	>6.0	0.05-0.10	3.6-6.0	Low----------	0.10	5	2	.5-2
	8-80	0-4	1.40-1.70	>6.0	0.02-0.05	3.6-6.0	Low----------	0.10			
14--------------- Lake	0-80	1-3	1.45-1.65	>6.0	0.03-0.08	4.5-5.5	Low----------	0.10	5	2	.5-1
15--------------- Adamsville	0-5	2-8	1.37-1.44	6.0-20	0.05-0.10	4.5-7.8	Low----------	0.10	5	2	.5-1
	5-80	1-7	1.49-1.58	6.0-20	0.03-0.08	4.5-7.8	Low----------	0.10			
16--------------- Apopka	0-54	<3	1.45-1.60	6.0-20	0.03-0.05	4.5-6.0	Low----------	0.10	5	2	<2
	54-80	18-37	1.55-1.75	0.6-2.0	0.12-0.17	4.5-6.0	Low----------	0.24			
17: Sumterville-----	0-7	1-5	1.20-1.50	6.0-20	0.08-0.12	4.5-6.5	Low----------	0.10	5	2	<3
	7-25	1-5	1.45-1.70	6.0-20	0.05-0.08	4.5-6.5	Low----------	0.10			
	25-80	40-60	1.55-1.70	0.06-0.2	0.10-0.18	5.1-7.3	High---------	0.28			

TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
								K	T		
	In	Pct	G/cc	In/hr	In/in	pH					Pct
17: Mabel	0-6	2-8	1.45-1.55	2.0-20	0.10-0.15	4.5-7.3	Low	0.10	5	2	1-2
	6-14	20-40	1.60-1.70	0.06-0.2	0.13-0.18	5.6-8.4	Moderate	0.24			
	14-52	40-60	1.55-1.70	0.06-0.2	0.15-0.18	5.6-8.4	High	0.28			
	52-80	20-60	1.60-1.70	0.06-0.2	0.13-0.18	5.6-8.4	High	0.28			
Tavares	0-8	0-4	1.25-1.60	>6.0	0.05-0.10	3.6-6.0	Low	0.10	5	2	.5-2
	8-80	0-4	1.40-1.70	>6.0	0.02-0.05	3.6-6.0	Low	0.10			
18 Okeelanta	0-38	---	0.22-0.38	6.0-20	0.30-0.50	4.5-6.5	Low	---	---	2	60-90
	38-80	1-5	1.30-1.55	6.0-20	0.05-0.10	5.1-7.8	Low	0.15			
19 Apopka	0-45	<3	1.45-1.60	6.0-20	0.03-0.05	4.5-6.0	Low	0.10	5	2	<2
	45-80	18-37	1.55-1.75	0.6-2.0	0.12-0.17	4.5-6.0	Low	0.24			
20 Florahome	0-20	1-8	1.35-1.45	6.0-20	0.07-0.12	4.5-6.5	Low	0.10	5	2	1-5
	20-80	1-8	1.40-1.60	6.0-20	0.03-0.10	4.5-6.5	Low	0.10			
21 EauGallie	0-8	1-6	1.25-1.50	6.0-20	0.02-0.07	4.5-6.0	Low	0.10	5	2	1-4
	8-25	1-6	1.45-1.70	6.0-20	0.03-0.08	4.5-6.0	Low	0.10			
	25-36	2-8	1.45-1.60	0.6-6.0	0.15-0.25	4.5-6.5	Low	0.15			
	36-57	1-6	1.45-1.65	6.0-20	0.02-0.05	5.1-7.8	Low	0.10			
	57-80	13-34	1.55-1.70	0.2-0.6	0.10-0.20	5.1-7.8	Low	0.20			
22 Smyrna	0-15	1-6	1.35-1.45	6.0-20	0.03-0.07	3.6-7.3	Low	0.10	5	2	1-5
	15-28	3-8	1.35-1.45	0.6-6.0	0.10-0.20	3.6-7.3	Low	0.15			
	28-80	1-6	1.50-1.65	6.0-20	0.03-0.07	4.5-5.5	Low	0.10			
23 Ona	0-9	1-7	1.40-1.55	6.0-20	0.10-0.15	3.6-6.0	Low	0.10	5	2	1-5
	9-20	3-8	1.50-1.65	0.6-2.0	0.10-0.15	3.6-6.0	Low	0.15			
	20-80	1-4	1.50-1.65	6.0-20	0.03-0.08	3.6-6.0	Low	0.10			
24 Basinger	0-8	0-4	1.40-1.55	6.0-20	0.03-0.07	3.6-8.4	Low	0.10	5	2	.5-2
	8-27	0-4	1.40-1.55	6.0-20	0.05-0.10	3.6-7.3	Low	0.10			
	27-45	1-6	1.40-1.65	6.0-20	0.10-0.15	3.6-7.3	Low	0.10			
	45-80	1-3	1.50-1.70	6.0-20	0.05-0.10	3.6-7.3	Low	0.10			
25 Kanapaha	0-3	2-6	1.20-1.50	6.0-20	0.03-0.10	4.5-6.0	Low	0.10	5	2	.5-4
	3-55	2-6	1.55-1.75	6.0-20	0.03-0.08	4.5-6.0	Low	0.10			
	55-80	15-40	1.50-1.65	0.06-0.6	0.07-0.15	4.5-6.0	Low	0.24			
26 Vero	0-4	1-5	1.30-1.60	6.0-20	0.03-0.08	3.6-5.5	Low	0.10	5	2	2-10
	4-15	1-6	1.40-1.65	6.0-20	0.02-0.05	4.5-7.3	Low	0.10			
	15-21	5-12	1.60-1.75	0.6-2.0	0.10-0.15	5.6-8.4	Low	0.15			
	21-60	12-42	1.55-1.75	0.2-2.0	0.15-0.20	5.6-8.4	Moderate	0.24			
	60-80	10-32	1.50-1.70	0.2-2.0	0.10-0.15	7.4-8.4	Low	0.20			
27 Sumterville	0-9	1-5	1.20-1.50	6.0-20	0.08-0.12	4.5-6.5	Low	0.10	5	2	<3
	9-29	1-5	1.45-1.70	6.0-20	0.05-0.08	4.5-6.5	Low	0.10			
	29-80	40-60	1.55-1.70	0.06-0.2	0.10-0.18	5.1-7.3	High	0.28			
28 Seffner	0-12	1-8	1.35-1.45	6.0-20	0.07-0.12	4.5-7.3	Low	0.10	5	2	1-5
	12-18	1-8	1.35-1.45	6.0-20	0.07-0.12	4.5-7.3	Low	0.10			
	18-80	1-8	1.50-1.60	6.0-20	0.04-0.08	4.5-7.3	Low	0.10			
29 Nittaw	0-5	---	0.20-1.00	6.0-20	0.20-0.25	3.6-4.4	Low	---	---	2	20-90
	5-12	10-20	1.25-1.55	6.0-20	0.05-0.15	5.6-7.3	Low	0.10			
	12-65	35-60	1.45-1.70	0.06-0.2	0.15-0.18	5.6-8.4	High	0.32			
	65-80	1-20	1.45-1.70	6.0-20	0.05-0.10	6.6-8.4	Low	0.20			

TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
	In	Pct	G/cc	In/hr	In/in	pH		K	T		Pct
30--------------- Placid	0-16	<10	1.20-1.40	6.0-20	0.15-0.20	3.6-5.5	Low-----------	0.10	5	2	2-10
	16-80	<10	1.30-1.60	6.0-20	0.05-0.08	3.6-5.5	Low-----------	0.10			
31--------------- Myakka	0-25	<2	1.35-1.55	6.0-20	0.02-0.05	4.5-5.5	Low-----------	0.10	5	2	<2
	25-40	1-8	1.45-1.60	0.6-6.0	0.10-0.20	3.6-6.0	Low-----------	0.15			
	40-80	<2	1.48-1.70	6.0-20	0.02-0.10	3.6-6.0	Low-----------	0.10			
32--------------- Pompano	0-80	0-5	1.30-1.65	6.0-20	0.02-0.05	4.5-7.8	Low-----------	0.10	5	2	1-5
33--------------- Sparr	0-8	1-5	1.20-1.50	6.0-20	0.08-0.12	4.5-6.5	Low-----------	0.10	5	2	<3
	8-46	1-5	1.45-1.70	6.0-20	0.05-0.08	4.5-6.5	Low-----------	0.10			
	46-58	15-32	1.55-1.80	0.6-2.0	0.10-0.15	4.5-6.5	Low-----------	0.20			
	58-80	15-38	1.55-1.85	0.06-0.6	0.10-0.18	4.5-6.5	Low-----------	0.24			
34--------------- Tarrytown	0-7	10-25	1.40-1.55	0.6-2.0	0.10-0.15	6.6-8.4	Low-----------	0.20	5	3	2-4
	7-14	20-35	1.55-1.70	0.6-2.0	0.12-0.17	6.6-8.4	Low-----------	0.28			
	14-50	15-30	1.40-1.55	0.06-0.2	0.12-0.15	7.4-8.4	Low-----------	0.20			
	50-80	1-5	1.25-1.50	6.0-20	0.05-0.08	7.4-9.0	Low-----------	0.10			
35--------------- Pompano	0-80	0-5	1.30-1.65	6.0-20	0.02-0.05	4.5-7.8	Low-----------	0.10	5	2	1-5
36--------------- Floridana	0-12	3-10	1.40-1.50	6.0-20	0.10-0.20	4.5-8.4	Low-----------	0.10	5	2	6-15
	12-25	1-7	1.50-1.55	6.0-20	0.05-0.10	4.5-8.4	Low-----------	0.10			
	25-80	15-30	1.60-1.70	<0.2	0.10-0.20	4.5-8.4	Low-----------	0.24			
37--------------- Astatula	0-5	1-3	1.25-1.50	>20	0.04-0.10	4.5-6.5	Low-----------	0.10	5	2	.5-2
	5-80	1-3	1.45-1.60	>20	0.02-0.05	4.5-6.5	Low-----------	0.10			
39--------------- Mabel	0-16	2-8	1.45-1.55	2.0-20	0.10-0.15	4.5-7.3	Low-----------	0.10	5	2	1-2
	16-24	20-40	1.60-1.70	0.06-0.2	0.13-0.18	5.6-8.4	Moderate-----	0.24			
	24-30	40-60	1.55-1.70	0.06-0.2	0.15-0.18	5.6-8.4	High---------	0.28			
	30-80	20-60	1.60-1.70	0.06-0.2	0.13-0.18	5.6-8.4	High---------	0.28			
40--------------- Millhopper	0-7	1-5	1.20-1.50	6.0-20	0.05-0.10	5.6-6.5	Low-----------	0.10	5	2	.5-2
	7-45	1-5	1.45-1.70	6.0-20	0.05-0.08	5.6-6.5	Low-----------	0.10			
	45-80	15-30	1.80-1.90	0.06-2.0	0.10-0.15	4.5-5.5	Low-----------	0.28			
41--------------- Everglades	0-8	---	0.15-0.35	6.0-20	0.20-0.50	4.5-7.8	Low-----------	----	---	2	60-80
	8-28	---	0.15-0.35	6.0-20	0.45-0.50	4.5-7.8	Low-----------	----			
	28-80	---	0.10-0.20	>20	0.45-0.50	4.5-7.8	Low-----------	----			
42--------------- Adamsville	0-8	1-8	1.35-1.65	6.0-20	0.05-0.10	4.5-7.8	Low-----------	0.10	5	2	<2
	8-80	1-7	1.35-1.65	6.0-20	0.03-0.08	4.5-7.8	Low-----------	0.10			
43--------------- Basinger	0-6	0-4	1.40-1.55	6.0-20	0.05-0.10	3.6-7.3	Low-----------	0.10	5	2	1-8
	6-15	0-4	1.40-1.55	6.0-20	0.05-0.10	3.6-7.3	Low-----------	0.10			
	15-30	1-3	1.40-1.65	6.0-20	0.10-0.15	3.6-7.3	Low-----------	0.10			
	30-80	1-3	1.50-1.70	6.0-20	0.05-0.10	3.6-7.3	Low-----------	0.10			
44--------------- Oldsmar	0-31	<2	1.35-1.55	6.0-20	0.02-0.07	3.6-7.3	Low-----------	0.10	5	2	1-2
	31-48	2-8	1.42-1.59	0.2-6.0	0.10-0.15	3.6-7.3	Low-----------	0.15			
	48-80	15-30	1.60-1.69	<0.2	0.10-0.15	6.1-8.4	Low-----------	0.24			
45--------------- Electra	0-3	1-6	1.40-1.55	6.0-20	0.05-0.10	4.5-6.0	Low-----------	0.10	5	1	1-2
	3-35	1-6	1.45-1.70	6.0-20	0.02-0.07	4.5-6.0	Low-----------	0.10			
	35-40	1-6	1.50-1.70	0.6-2.0	0.10-0.15	4.5-6.0	Low-----------	0.15			
	40-46	1-6	1.45-1.70	6.0-20	0.02-0.07	4.5-6.0	Low-----------	0.10			
	46-80	18-38	1.60-1.75	<0.2	0.10-0.15	4.5-6.0	Low-----------	0.28			

TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors K	Erosion factors T	Wind erodi-bility group	Organic matter
	In	Pct	G/cc	In/hr	In/in	pH					Pct
46 Ft. Green	0-28	1-5	1.25-1.55	6.0-20	0.05-0.10	5.1-7.3	Low	0.10	5	2	1-3
	28-38	15-30	1.50-1.65	0.06-0.6	0.12-0.18	5.1-7.3	Low	0.15			
	38-58	20-40	1.50-1.65	0.06-0.6	0.12-0.18	5.6-7.3	Moderate	0.24			
	58-80	20-30	1.50-1.65	0.06-0.6	0.10-0.15	5.6-7.8	Low	0.15			
47 Okeelanta	0-19	---	0.15-0.35	6.0-20	0.20-0.45	6.6-7.3	Low	----	---	2	60-85
	19-80	1-5	1.30-1.55	6.0-20	0.05-0.10	6.6-8.4	Low	0.10			
48 Malabar	0-6	<4	1.35-1.55	6.0-20	0.03-0.08	5.6-8.4	Low	0.10	5	2	1-4
	6-48	1-5	1.35-1.70	6.0-20	0.05-0.10	5.6-8.4	Low	0.10			
	48-80	12-25	1.60-1.69	0.6-0.2	0.10-0.15	5.6-8.4	Low	0.24			
49 Terra Ceia	0-80	---	0.15-0.35	6.0-20	0.30-0.50	4.5-8.4	Low	----	2	2	>60
50 Immokalee	0-5	1-5	1.20-1.50	6.0-20	0.05-0.10	3.6-6.0	Low	0.10	5	2	1-2
	5-34	1-5	1.45-1.70	6.0-20	0.02-0.05	3.6-6.0	Low	0.10			
	34-46	2-7	1.30-1.60	0.6-2.0	0.10-0.25	3.6-6.0	Low	0.15			
	46-80	1-5	1.40-1.60	6.0-20	0.02-0.05	3.6-6.0	Low	0.10			
51. Pits-Dumps											
52 Candler	0-5	<3	1.35-1.55	6.0-20	0.04-0.08	4.5-6.0	Low	0.10	5	2	.5-2
	5-52	<3	1.50-1.65	6.0-20	0.02-0.06	4.5-6.0	Low	0.10			
	52-80	3-8	1.50-1.65	6.0-20	0.05-0.08	4.5-6.0	Low	0.10			
53 Tavares	0-7	0-4	1.25-1.60	>6.0	0.05-0.10	3.6-6.0	Low	0.10	5	2	.5-2
	7-80	0-4	1.40-1.70	>6.0	0.02-0.05	3.6-6.0	Low	0.10			
54 Monteocha	0-11	1-8	0.90-1.25	6.0-20	0.15-0.30	3.6-5.5	Low	0.15	5	2	5-10
	11-65	0-6	1.40-1.65	2.0-20	0.10-0.15	3.6-5.5	Low	0.10			
	65-80	15-30	1.50-1.70	0.2-2.0	0.10-0.15	3.6-5.5	Low	0.24			
55 Pomello	0-40	<2	1.35-1.65	>20	0.02-0.05	4.5-6.0	Low	0.10	5	1	<1
	40-56	<2	1.45-1.60	2.0-6.0	0.10-0.30	4.5-6.0	Low	0.15			
	56-80	<2	1.35-1.65	6.0-20	0.02-0.05	4.5-6.0	Low	0.10			
56 Vero	0-17	1-6	1.00-1.60	6.0-20	0.03-0.08	3.6-5.5	Low	0.10	5	2	2-10
	17-33	1-8	1.60-1.85	6.0-20	0.10-0.15	4.5-7.3	Low	0.15			
	33-60	12-32	1.50-1.70	0.06-0.6	0.10-0.15	5.6-8.4	Low	0.24			
	60-80	7-19	1.60-1.80	0.06-0.6	0.05-0.10	7.4-8.4	Low	0.20			
57 Gator	0-25	0-2	0.20-0.30	6.0-20	0.30-0.40	3.6-6.0	Low	----	---	2	55-80
	25-40	14-35	1.60-1.70	0.6-2.0	0.10-0.15	6.1-8.4	Low	0.32			
	40-60	3-12	1.60-1.70	0.6-2.0	0.10-0.15	6.1-8.4	Low	0.24			
	60-80	2-7	1.40-1.65	6.0-20	0.03-0.05	6.1-8.4	Low	0.15			
58 Paisley	0-13	2-8	1.35-1.45	6.0-20	0.05-0.08	4.5-8.4	Low	0.10	5	2	1-4
	13-80	45-65	1.55-1.65	0.06-0.2	0.15-0.18	5.6-8.4	High	0.28			
59. Arents											
60 Delray	0-16	3-13	1.35-1.45	6.0-20	0.10-0.15	5.6-7.3	Low	0.10	5	2	2-5
	16-60	1-7	1.50-1.65	6.0-20	0.05-0.08	6.1-7.3	Low	0.10			
	60-80	13-30	1.45-1.60	0.6-6.0	0.10-0.15	6.6-7.8	Low	0.24			

TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
								K	T		
	In	Pct	G/cc	In/hr	In/in	pH					Pct
61---------------	0-21	<5	1.25-1.50	6.0-20	0.02-0.07	4.5-6.0	Low-----------	0.10	5	2	2-8
EauGallie	21-34	1-8	1.45-1.60	0.6-6.0	0.15-0.25	4.5-6.5	Low-----------	0.15			
	34-50	1-5	1.45-1.65	6.0-20	0.02-0.05	4.5-7.8	Low-----------	0.10			
	50-65	13-31	1.55-1.70	0.06-2.0	0.10-0.20	4.5-7.8	Low-----------	0.20			
	65-80	1-13	1.45-1.55	0.6-6.0	0.05-0.15	4.5-7.8	Low-----------	0.15			
62. Urban land											
63:											
Floridana--------	0-11	3-10	1.40-1.50	6.0-20	0.10-0.20	4.5-8.4	Low-----------	0.10	5	2	6-15
	11-26	1-7	1.50-1.60	6.0-20	0.05-0.10	4.5-8.4	Low-----------	0.10			
	26-80	15-30	1.60-1.70	<0.2	0.10-0.20	4.5-8.4	Low-----------	0.24			
Basinger---------	0-22	0-4	1.40-1.55	6.0-20	0.03-0.07	3.6-7.3	Low-----------	0.10	5	2	.2-1
	22-40	1-6	1.40-1.65	6.0-20	0.10-0.15	3.6-7.3	Low-----------	0.10			
	40-80	1-3	1.50-1.70	6.0-20	0.05-0.10	3.6-7.3	Low-----------	0.10			
64---------------	0-38	0-1	0.10-0.30	6.0-20	0.30-0.40	3.6-6.0	Low-----------	----	---	2	55-85
Gator	38-42	1-2	1.20-1.55	2.0-6.0	0.03-0.05	4.5-6.5	Low-----------	0.17			
	42-80	13-20	1.60-1.70	<0.2	0.10-0.15	6.1-8.4	Low-----------	0.32			
65---------------	0-3	0-3	1.35-1.55	6.0-20	0.04-0.08	4.5-6.0	Low-----------	0.10	5	2	<1
Candler	3-65	1-3	1.35-1.55	6.0-20	0.02-0.06	4.5-6.0	Low-----------	0.10			
	65-80	3-8	1.50-1.65	6.0-20	0.05-0.08	4.5-6.0	Low-----------	0.10			
66---------------	0-58	1-7	1.25-1.65	6.0-20	0.05-0.10	4.5-6.0	Low-----------	0.10	5	2	<2
Arredondo	58-65	10-18	1.45-1.65	2.0-6.0	0.08-0.15	4.5-6.0	Low-----------	0.24			
	65-80	15-25	1.55-1.70	0.6-6.0	0.12-0.17	4.5-6.0	Low-----------	0.24			
67---------------	0-21	1-6	1.00-1.60	6.0-20	0.03-0.08	3.6-5.5	Low-----------	0.10	5	2	2-10
Vero	21-32	1-8	1.60-1.85	<0.2	0.10-0.15	4.5-7.3	Low-----------	0.15			
	32-65	12-32	1.50-1.70	<0.2	0.10-0.15	5.6-8.4	Low-----------	0.24			
	65-80	7-19	1.60-1.80	0.2-2.0	0.05-0.10	7.4-8.4	Low-----------	0.20			
68---------------	0-6	7-15	1.45-1.50	2.0-6.0	0.10-0.15	6.1-7.3	Low-----------	0.10	5	2	2-7
Chobee	6-41	20-35	1.55-1.75	<0.2	0.12-0.17	7.4-8.4	Moderate-----	0.32			
	41-80	7-20	1.60-1.75	0.2-6.0	0.06-0.10	7.4-8.4	Low-----------	0.20			

TABLE 16.--SOIL AND WATER FEATURES

["Flooding" and "water table" and terms such as "rare," "brief," "apparent," and "perched" are explained in the text. The symbol < means less than; > means more than. Absence of an entry indicates that the feature is not a concern or that data were not estimated]

Map symbol and soil name	Hydro-logic group	Flooding			High water table			Subsidence		Risk of corrosion	
		Frequency	Dura-tion	Months	Depth	Kind	Months	Initial	Total	Uncoated steel	Concrete
					Ft			In	In		
1-------------- Arredondo	A	None--------	---	---	>6.0	---	---	---	---	Moderate	High.
3-------------- Astatula	A	None--------	---	---	>6.0	---	---	---	---	Low-------	High.
4, 5----------- Candler	A	None--------	---	---	>6.0	---	---	---	---	Low-------	High.
6-------------- Kendrick	A	None--------	---	---	>6.0	---	---	---	---	Moderate	High.
8-------------- Lake	A	None--------	---	---	>6.0	---	---	---	---	Low-------	High.
9-------------- Paisley	D	Rare--------	---	---	0-1.0	Apparent	Jun-Nov	---	---	High------	Moderate.
10------------- Sparr	C	None--------	---	---	1.5-3.5	Apparent	Jul-Oct	---	---	Moderate	High.
11------------- Millhopper	A	None--------	---	---	3.5-6.0	Perched	Aug-Oct	---	---	Low-------	Moderate.
13------------- Tavares	A	None--------	---	---	3.5-6.0	Apparent	Jun-Dec	---	---	Low-------	High.
14------------- Lake	A	None--------	---	---	>6.0	---	---	---	---	Low-------	High.
15------------- Adamsville	C	None--------	---	---	2.0-3.5	Apparent	Jun-Nov	---	---	Moderate	High.
16------------- Apopka	A	None--------	---	---	>6.0	---	---	---	---	Moderate	High.
17*:											
Sumterville---	C	None--------	---	---	1.5-3.0	Perched	Jul-Oct	---	---	High------	High.
Mabel---------	C	None--------	---	---	1.5-3.0	Perched	Jul-Sep	---	---	High------	Moderate.
Tavares-------	A	None--------	---	---	3.5-6.0	Apparent	Jun-Oct	---	---	Low-------	High.
18* ----------- Okeelanta	B/D	None--------	---	---	+1-0	Apparent	Jun-Jan	16-20	16-30	High------	Moderate.
19------------- Apopka	A	None--------	---	---	>6.0	---	---	---	---	Moderate	High.
20------------- Florahome	A	None--------	---	---	4.0-6.0	Apparent	Jun-Dec	---	---	Low-------	High.
21------------- EauGallie	B/D	None--------	---	---	0-1.0	Apparent	Jun-Oct	---	---	High------	Moderate.

See footnote at end of table.

TABLE 16.--SOIL AND WATER FEATURES--Continued

Map symbol and soil name	Hydrologic group	Flooding			High water table			Subsidence		Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Initial	Total	Uncoated steel	Concrete
					Ft			In	In		
22------------ Smyrna	B/D	None-------	---	---	0-1.0	Apparent	Jul-Oct	---	---	High-----	High.
23------------ Ona	B/D	None-------	---	---	0-1.0	Apparent	Jun-Nov	---	---	High-----	High.
24------------ Basinger	B/D	None-------	---	---	0-1.0	Apparent	Jun-Feb	---	---	High-----	Moderate.
25------------ Kanapaha	B/D	None-------	---	---	0-1.0	Apparent	Jul-Sep	---	---	High-----	High.
26------------ Vero	B/D	None-------	---	---	0-1.0	Apparent	Jun-Oct	---	---	Moderate	High.
27------------ Sumterville	C	None-------	---	---	1.5-3.0	Perched	Jul-Oct	---	---	High-----	High.
28------------ Seffner	C	None-------	---	---	1.5-3.5	Apparent	Jun-Nov	---	---	Low------	Moderate.
29------------ Nittaw	D	Frequent---	Very long.	Jun-Sep	0-1.0	Apparent	Jun-Nov	---	---	High-----	High.
30* ----------- Placid	D	None-------	---	---	+2-1.0	Apparent	Jun-Mar	---	---	High-----	High.
31------------ Myakka	B/D	None-------	---	---	0-1.0	Apparent	Jun-Nov	---	---	High-----	High.
32------------ Pompano	B/D	None-------	---	---	0-1.0	Apparent	Jun-Nov	---	---	High-----	Moderate.
33------------ Sparr	C	None-------	---	---	1.5-3.5	Apparent	Jul-Oct	---	---	Moderate	High.
34------------ Tarrytown	C	None-------	---	---	1.5-2.5	Apparent	Jul-Sep	---	---	High-----	Low.
35* ----------- Pompano	D	None-------	---	---	+2-1.0	Apparent	Jun-Feb	---	---	High-----	Moderate.
36* ----------- Floridana	D	None-------	---	---	+2-1.0	Apparent	Jun-Feb	---	---	Moderate	Low.
37------------ Astatula	A	None-------	---	---	>6.0	---	---	---	---	Low------	High.
39------------ Mabel	C	None-------	---	---	1.5-3.0	Perched	Jul-Sep	---	---	High-----	Moderate.
40------------ Millhopper	A	None-------	---	---	3.5-6.0	Perched	Aug-Oct	---	---	Low------	Moderate.
41------------ Everglades	B/D	Frequent---	Very long.	Jun-Jan	0-1.0	Apparent	Jan-Dec	4-10	>76	Moderate	Moderate.
42------------ Adamsville	C	None-------	---	---	2.0-3.5	Apparent	Jun-Nov	---	---	Low------	Moderate.

See footnote at end of table.

TABLE 16.--SOIL AND WATER FEATURES--Continued

Map symbol and soil name	Hydrologic group	Flooding			High water table			Subsidence		Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Initial	Total	Uncoated steel	Concrete
					Ft			In	In		
43* Basinger	D	None	---	---	+2-1.0	Apparent	Jun-Feb	---	---	High	Moderate.
44 Oldsmar	B/D	None	---	---	0-1.0	Apparent	Jun-Oct	---	---	Moderate	High.
45 Electra	C	None	---	---	2.0-3.5	Apparent	Jul-Oct	---	---	Low	High.
46 Ft. Green	D	None	---	---	0-1.0	Apparent	Jun-Jan	---	---	High	Moderate.
47 Okeelanta	D	Frequent	Very long.	Mar-Sep	0-1.0	Apparent	Jan-Dec	4-8	10-18	High	Moderate.
48 Malabar	D	Frequent	Long	Jun-Nov	0-1.0	Apparent	Jun-Nov	---	---	High	Low.
49 Terra Ceia	D	Frequent	Very long.	Jun-Nov	0-1.0	Apparent	Jan-Dec	16-20	50-60	Moderate	Moderate.
50 Immokalee	B/D	None	---	---	0-1.0	Apparent	Jun-Nov	---	---	High	High.
51. Pits-Dumps											
52 Candler	A	None	---	---	>6.0	---	---	---	---	Low	High.
53 Tavares	A	None	---	---	3.5-6.0	Apparent	Jun-Dec	---	---	Low	High.
54* Monteocha	D	None	---	---	+2-0	Apparent	Jun-Feb	---	---	Moderate	High.
55 Pomello	C	None	---	---	2.0-3.5	Apparent	Jul-Nov	---	---	Low	High.
56* Vero	D	None	---	---	+1-1.0	Apparent	Jun-Feb	---	---	Moderate	High.
57 Gator	D	Frequent	Very long.	Jun-Apr	0-1.0	Apparent	Jun-Mar	2-6	20-28	High	High.
58* Paisley	D	None	---	---	+2-1.0	Apparent	Jun-Feb	---	---	High	Moderate.
59. Arents											
60* Delray	D	None	---	---	+2-1.0	Apparent	Jun-Dec	---	---	Moderate	Low.
61 EauGallie	B/D	None	---	---	0-1.0	Apparent	Jun-Oct	---	---	High	Moderate.
62. Urban land											

See footnote at end of table.

TABLE 16.--SOIL AND WATER FEATURES--Continued

Map symbol and soil name	Hydrologic group	Flooding			High water table			Subsidence		Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Initial	Total	Uncoated steel	Concrete
					Ft			In	In		
63:											
Floridana-----	D	Frequent---	Very long.	Jul-Sep	0-1.0	Apparent	Jun-Feb	---	---	Moderate	Low.
Basinger------	D	Frequent---	Long---	Jul-Sep	0-1.0	Apparent	Jun-Feb	---	---	High-----	Moderate.
64* ----------- Gator	D	None-------	---	---	+2-1.0	Apparent	Jun-Dec	2-6	20-23	High-----	High.
65------------- Candler	A	None-------	---	---	>6.0	---	---	---	---	Low------	High.
66------------- Arredondo	A	None-------	---	---	>6.0	---	---	---	---	Moderate	High.
67------------- Vero	B/D	None-------	---	---	0-1.0	Apparent	Jun-Oct	---	---	Moderate	High.
68------------- Chobee	B/D	Frequent---	Brief to very long.	Jun-Feb	0-1.0	Apparent	Jun-Feb	---	---	Moderate	Low.

* In the "High water table -- Depth" column, a plus sign preceding the range in depth indicates that the water table is above the surface of the soil. The first numeral in the range indicates how high the water rises above the surface. The second numeral indicates the depth below the surface.

TABLE 17.--PHYSICAL ANALYSES OF SELECTED SOILS

Soil name and sample number*	Depth	Horizon	Particle-size distribution								Hydraulic conductivity (saturated)	Bulk density (field moisture)	Water content		
			Sand						Silt (0.05-0.002 mm)	Clay (<0.002 mm)			1/10 bar	1/3 bar	15 bar
			Very coarse (2-1 mm)	Coarse (1-0.5 mm)	Medium (0.5-0.25 mm)	Fine (0.25-0.1 mm)	Very fine (0.1-0.05 mm)	Total (2-0.05 mm)							
	Cm		Pct	Pct	Pct	Pct	Pct	Pct	Pct	Pct	Cm/hr	G/cc	----Pct(wt)----		
Adamsville fine sand:															
S83FL-119-012-1	0-13	Ap	0.0	1.2	23.5	63.5	8.3	96.5	2.0	1.5	27.6	1.38	8.7	6.3	2.1
-2	13-23	C1	0.0	1.4	23.5	62.1	8.4	95.4	2.8	1.8	38.8	1.45	6.4	3.8	1.2
-3	23-43	C2	0.0	1.1	22.6	63.0	9.1	95.8	2.1	2.1	40.1	1.48	4.8	2.8	0.8
-4	43-74	C3	0.0	1.4	24.4	62.3	8.2	96.3	1.8	1.9	30.2	1.55	5.0	2.8	0.6
-5	74-203	C4	0.0	1.5	24.6	63.3	8.1	97.5	1.2	1.3	---	---	---	---	---
Arredondo fine sand:															
S84FL-119-016-1	0-23	Ap	0.0	2.7	23.8	58.3	8.7	93.5	2.2	4.3	35.2	1.43	10.3	7.9	3.3
-2	23-56	E1	0.1	3.3	25.9	53.9	7.6	90.8	3.9	5.3	18.4	1.54	7.8	5.6	2.7
-3	56-94	E2	0.1	3.0	22.5	55.9	8.3	89.8	2.9	7.3	41.6	1.50	6.1	4.5	2.2
-4	94-145	EB	0.0	2.9	19.4	56.6	8.3	87.2	2.7	10.1	18.7	1.54	8.2	6.3	3.4
-5	145-160	Bt1	0.1	3.0	19.1	50.2	6.7	79.1	3.5	17.4	3.3	1.46	14.6	12.1	5.7
-6	160-203	Bt2	0.1	4.6	22.8	35.4	5.2	68.1	5.6	26.3	1.1	1.61	18.9	17.2	10.3
Candler sand:															
S82FL-119-005-1	0-20	Ap	1.4	18.3	39.7	32.7	3.6	95.7	2.2	2.1	47.3	1.54	5.8	3.7	1.1
-2	20-76	E1	1.7	18.7	41.2	33.6	3.7	98.9	0.0	1.1	108.5	1.50	3.8	2.4	0.8
-3	76-127	E2	2.1	18.5	39.2	33.0	3.5	96.3	2.0	1.7	92.7	1.58	3.0	1.8	0.6
-4	127-165	E&B1	2.1	19.3	37.3	34.4	3.7	96.8	1.6	1.6	66.4	1.60	2.5	1.3	0.4
-5	165-203	E&B2	1.7	17.1	38.5	35.5	4.0	96.8	1.8	1.4	38.4	1.61	2.7	1.4	0.4
Florahome sand:															
S84FL-119-018-1	0-25	Ap	0.1	4.1	45.0	40.1	4.7	94.0	2.1	3.9	20.4	1.56	9.7	7.2	1.6
-2	25-51	A	0.2	4.6	46.9	37.5	4.1	93.3	4.1	2.6	48.0	1.47	7.1	5.3	1.6
-3	51-84	AC	0.1	3.7	44.8	40.1	5.0	93.7	3.5	2.8	68.4	1.46	6.1	4.6	1.5
-4	84-104	C1	0.1	4.0	44.2	40.7	4.7	93.7	3.5	2.8	65.1	1.52	5.5	4.2	1.4
-5	104-183	C2	0.1	3.6	42.2	43.3	5.1	94.3	3.2	2.5	44.7	1.59	4.9	3.6	1.1
-6	183-203	C3	0.1	3.9	41.9	43.0	5.7	94.6	3.6	1.8	40.1	1.58	5.4	4.1	0.9
Ft. Green fine sand:															
S83FL-119-015-1	0-15	Ap	0.0	1.7	26.6	54.3	10.2	92.8	6.2	1.0	57.2	1.18	13.3	9.3	2.6
-2	15-36	E1	0.0	1.8	27.4	56.0	9.9	95.1	3.3	1.6	17.1	1.54	4.9	2.6	0.6
-3	36-71	E2	0.0	2.3	23.5	56.5	12.3	94.6	3.7	1.7	10.3	1.62	4.3	2.0	0.4
-4	71-96	Btg1	0.0	1.4	17.7	42.7	9.4	71.2	5.5	23.3	0.2	1.71	18.1	16.6	8.2
-5	96-147	Btg2	0.0	1.3	14.6	35.8	9.8	61.5	9.3	29.2	0.7	1.62	22.2	20.9	13.4
-6	147-203	BC	0.0	1.2	16.0	38.0	9.8	65.0	7.6	27.4	0.0	1.70	19.7	18.5	11.3
Lake fine sand:															
S84FL-119-017-1	0-22	Ap	0.0	2.9	25.8	58.4	7.8	94.9	1.8	3.3	53.9	1.43	9.1	6.5	2.3
-2	22-58	C1	0.0	2.8	30.1	53.3	6.6	92.8	3.0	4.2	53.2	1.44	7.2	5.2	2.2
-3	58-99	C2	0.1	2.8	30.9	53.1	6.2	93.1	2.5	4.4	64.4	1.50	5.5	4.0	1.9
-4	99-160	C3	0.1	2.8	29.3	53.9	6.5	92.6	2.4	5.0	49.3	1.56	5.9	4.6	2.0
-5	160-203	C4	0.1	3.2	27.1	57.0	6.3	93.7	1.9	4.4	48.0	1.57	5.4	4.2	1.7

TABLE 17.--PHYSICAL ANALYSES OF SELECTED SOILS--Continued

Soil name and sample number*	Depth	Horizon	Particle-size distribution								Hydraulic conduc-tivity (saturated)	Bulk density (field moisture)	Water content		
			Sand												
			Very coarse (2-1 mm)	Coarse (1-0.5 mm)	Medium (0.5-0.25 mm)	Fine (0.25-0.1 mm)	Very fine (0.1-0.05 mm)	Total (2-0.05 mm)	Silt (0.05-0.002 mm)	Clay (<0.002 mm)			1/10 bar	1/3 bar	15 bar
	Cm		Pct	Pct	Pct	Pct	Pct	Pct	Pct	Pct	Cm/hr	G/cc	----Pct (wt)----		
Mabel fine sand:															
S83FL-119-011-1	0-15	A	0.2	1.7	21.7	56.9	12.7	93.2	4.7	2.1	11.6	1.47	10.3	6.6	1.8
-2	15-25	E1	0.2	1.9	21.5	57.4	12.7	93.7	4.5	1.8	5.6	1.67	7.2	4.0	0.7
-3	25-41	E2	0.2	2.6	20.9	56.4	13.4	93.5	3.9	2.6	6.8	1.67	7.0	3.6	0.7
-4	41-61	Bt1	0.0	1.1	13.7	39.3	9.7	63.8	6.2	30.0	0.2	1.78	18.3	16.9	11.5
-5	61-76	Bt2	0.8	2.0	6.6	13.6	5.4	28.4	21.8	49.8	0.0	1.16	46.6	45.0	26.6
-6	76-109	Ck1	2.2	4.0	8.0	18.0	6.2	38.4	13.7	47.9	0.1	1.55	25.0	22.9	14.1
-7	109-142	Ck2	11.2	8.8	6.8	7.6	5.4	39.8	23.1	37.1	0.2	1.44	29.8	28.2	19.9
-8	142-203	Ck3	9.8	11.0	7.6	7.2	5.0	40.6	22.6	36.8	---	---	---	---	---
Millhopper sand:															
S82FL-119-006-1	0-13	Ap	0.0	2.8	30.1	49.1	12.9	94.9	2.5	2.6	18.7	1.43	10.4	6.9	2.5
-2	13-81	E1	0.1	2.8	28.1	50.5	13.7	95.2	2.9	1.9	17.3	1.59	6.6	3.9	1.2
-3	81-112	E2	0.1	3.3	27.7	51.4	13.7	96.2	2.3	1.5	18.1	1.61	4.3	2.1	0.7
-4	112-127	EB	0.1	3.3	26.3	50.3	12.7	92.7	2.3	5.0	7.2	1.65	7.6	5.1	2.6
-5	127-142	Bt	0.0	1.0	16.0	35.2	14.2	66.4	13.0	20.6	2.2	1.63	13.2	10.6	6.4
-6	142-183	Btg1	0.2	2.8	21.4	41.0	12.8	78.2	1.4	20.4	0.4	1.62	17.6	15.6	10.5
-7	183-203	Btg2	0.0	1.4	30.2	27.6	9.8	69.0	1.4	29.6	0.6	1.68	17.8	15.8	10.1
Myakka sand:															
S83FL-119-010-1	0-15	A	0.0	2.9	39.4	48.8	6.3	97.4	0.8	1.8	26.6	1.27	17.0	12.1	3.6
-2	15-30	E1	0.1	3.1	38.6	49.2	6.0	97.0	1.9	1.1	26.7	1.46	7.1	4.5	0.9
-3	30-64	E2	0.1	2.6	33.0	53.4	7.7	96.8	2.2	1.0	18.0	1.56	5.0	3.0	0.6
-4	64-79	Bh1	0.0	2.5	32.5	53.5	7.5	96.0	2.3	1.7	27.9	1.34	26.2	20.0	3.8
-5	79-102	Bh2	0.0	3.0	33.0	50.1	6.3	92.4	3.3	4.3	10.2	1.48	15.8	11.9	2.2
-6	102-130	C1	0.0	2.8	31.8	53.3	7.6	95.5	2.1	2.4	6.8	1.55	8.1	5.1	0.7
-7	130-203	C2	0.0	3.0	31.7	54.6	7.9	97.2	2.2	0.6	---	---	---	---	---
Oldsmar fine sand:															
S83FL-119-009-1	0-13	A1	0.0	2.1	28.0	56.8	9.6	96.5	2.0	1.5	10.8	1.18	38.8	32.5	3.3
-2	13-23	A2	0.0	1.9	28.6	57.4	9.2	97.1	2.6	0.3	22.2	1.36	25.9	21.9	1.3
-3	23-43	E1	0.0	2.1	23.9	59.9	11.2	97.1	1.3	1.6	13.4	1.54	19.1	16.7	0.3
-4	43-79	E2	0.0	2.3	24.9	59.1	10.7	97.0	2.1	0.9	21.7	1.61	5.5	2.8	0.7
-5	79-96	Bh1	0.1	2.6	23.2	57.7	10.9	94.5	3.5	2.0	1.8	1.58	17.5	13.0	2.1
-6	96-122	Bh2	0.6	2.7	21.1	58.4	11.6	94.4	2.4	3.2	9.4	1.57	10.0	6.9	1.8
-7	122-178	Btg1	0.6	2.3	16.8	35.0	7.0	62.0	5.1	32.9	6.1	1.46	28.1	26.6	14.6
-8	178-203	Btg2	0.0	1.4	19.0	40.2	7.6	68.2	4.0	27.8	0.0	1.64	21.8	20.6	12.2
Sparr fine sand:															
S82FL-119-007-1	0-23	A	0.1	3.0	26.2	52.5	12.6	94.4	3.9	1.7	18.4	1.49	8.0	4.5	1.5
-2	23-43	E1	0.0	2.8	26.8	51.6	12.9	94.1	3.0	2.9	18.4	1.57	5.4	2.8	0.8
-3	43-74	E2	0.1	3.2	26.0	51.8	13.2	94.3	2.7	3.0	19.7	1.59	5.1	2.7	0.8
-4	74-114	E3	0.1	3.6	25.4	52.8	13.0	94.9	2.5	2.6	26.8	1.59	4.7	2.4	0.7
-5	114-130	Btg1	0.0	2.6	19.2	42.8	11.6	76.2	10.3	13.5	4.8	1.68	8.9	6.1	3.4
-6	130-180	Btg2	0.0	2.4	21.6	36.6	11.6	72.2	2.1	25.7	1.6	1.61	18.0	15.5	9.9
-7	180-203	Btg3	0.0	1.6	21.6	37.4	13.0	73.6	2.0	24.4	0.7	1.79	15.5	12.7	7.3

TABLE 17.--PHYSICAL ANALYSES OF SELECTED SOILS--Continued

Soil name and sample number*	Depth	Horizon	Particle-size distribution								Hydraulic conductivity (saturated)	Bulk density (field moisture)	Water content		
			Sand						Silt (0.05-0.002 mm)	Clay (<0.002 mm)			1/10 bar	1/3 bar	15 bar
			Very coarse (2-1 mm)	Coarse (1-0.5 mm)	Medium (0.5-0.25 mm)	Fine (0.25-0.1 mm)	Very fine (0.1-0.05 mm)	Total (2-0.05 mm)							
	Cm		Pct	Pct	Pct	Pct	Pct	Pct	Pct	Pct	Cm/hr	G/cc	----Pct (wt)----		
Sumterville fine sand:															
S82FL-119-004-1	0-23	Ap	0.1	2.2	20.1	64.4	8.4	95.3	3.1	1.6	32.8	1.40	7.3	4.8	1.6
-2	23-61	E1	0.1	2.1	19.6	65.5	7.9	95.2	3.2	1.6	12.5	1.57	5.9	3.2	0.4
-3	61-74	E2	0.1	2.2	18.0	66.0	8.4	94.7	3.3	2.0	18.8	1.58	5.2	2.8	0.8
-4	74-119	Btq1	0.0	1.2	10.0	43.4	3.8	58.4	5.6	36.0	0.0	1.59	23.7	22.1	13.4
-5	119-160	Btq2	0.0	0.6	6.6	35.0	3.2	45.4	6.4	48.2	0.0	1.27	38.8	37.5	25.8
-6	160-203	Btq3	0.0	0.8	10.2	31.0	3.8	45.8	6.6	47.6	0.0	1.25	40.4	38.9	26.5
Tarrytown sandy clay loam:															
S83FL-119-014-1	0-18	Ap	0.2	1.7	17.9	37.6	9.9	67.3	11.1	21.6	0.0	1.56	21.9	18.8	9.2
-2	18-25	Btk1	0.1	1.1	14.8	33.2	9.0	58.2	11.7	30.1	0.0	1.47	25.2	22.9	10.7
-3	25-36	Btk2	0.0	0.9	14.0	31.6	8.5	55.0	10.9	34.1	0.0	1.38	32.7	31.2	15.3
-4	36-56	Ck1	0.2	2.8	9.6	16.8	8.6	38.0	32.1	29.9	0.2	1.02	49.0	46.2	19.4
-5	56-127	Ck2	0.8	4.6	12.2	19.0	10.0	46.6	33.5	19.9	0.3	0.95	54.1	51.0	20.9
-6	127-203	C	0.0	1.9	28.7	58.2	7.5	96.3	1.5	2.2	8.4	1.41	16.1	11.3	4.1

* All of the soils are the typical pedon for the series in this survey area. For location of the sample site, see the series description in the section "Soil Series and Their Morphology."

TABLE 18.--CHEMICAL ANALYSES OF SELECTED SOILS

Soil series and sample number*	Depth	Horizon	Extractable bases					Extractable acidity	Sum of cations	Base saturation	Organic carbon	Electrical conductivity	pH			Pyrophosphate extractable			Citrate dithionite extractable	
			Ca	Mg	Na	K	Sum						H_2O (1:1)	$CaCl_2$ (1:2)	KCl (1:1)	C	Fe	Al	Fe	Al
	cm		----Milliequivalents/100 grams of soil---							Pct	Pct	Mmho/cm				Pct	Pct	Pct	Pct	Pct
Adamsville fine sand:																				
S83FL-119-012-1	0-13	Ap	1.03	0.21	0.03	0.05	1.32	2.43	3.74	35	0.99	0.01	5.9	4.8	4.9	---	---	---	---	---
-2	13-23	C1	0.34	0.08	0.03	0.03	0.48	2.17	2.65	18	0.45	0.01	5.8	4.8	4.6	---	---	---	---	---
-3	23-43	C2	0.18	0.06	0.03	0.01	0.28	1.14	1.42	20	0.22	0.01	5.7	5.0	4.8	---	---	---	---	---
-4	43-74	C3	0.11	0.04	0.02	0.01	0.18	0.54	0.72	25	0.16	0.00	5.8	5.0	4.9	---	---	---	---	---
-5	74-203	C4	0.08	0.03	0.01	0.01	0.13	0.98	1.11	12	0.06	0.00	6.0	5.5	5.5	---	---	---	---	---
Arredondo fine sand:																				
S84FL-119-016-1	0-23	Ap	2.87	0.60	0.02	0.19	3.68	4.03	7.71	48	0.93	0.01	6.5	5.4	5.2	---	---	---	---	---
-2	23-56	E1	1.21	0.21	0.02	0.07	1.51	3.74	5.25	29	0.34	0.00	6.3	5.3	5.1	---	---	---	---	---
-3	56-94	E2	0.57	0.22	0.02	0.09	0.90	2.59	3.49	26	0.17	0.00	5.8	4.7	4.6	---	---	---	---	---
-4	94-145	EB	0.87	0.41	0.02	0.04	1.34	2.88	4.22	32	0.10	0.00	5.6	4.5	4.6	---	---	---	---	---
-5	145-160	Bt1	1.74	0.99	0.02	0.06	2.81	4.58	7.39	38	0.12	0.00	5.5	4.4	4.5	---	---	---	0.32	0.15
-6	160-203	Bt2	1.84	1.09	0.04	0.10	3.07	8.95	12.02	26	0.07	0.00	5.2	4.0	4.1	---	---	---	0.48	0.19
Candler sand:																				
S82FL-119-005-1	0-20	Ap	0.32	0.10	0.03	0.03	0.48	2.83	3.31	15	0.68	0.02	5.2	4.4	4.0	---	---	---	---	---
-2	20-76	E1	0.04	0.01	0.02	0.01	0.08	1.07	1.15	7	0.14	0.02	5.1	4.5	4.4	---	---	---	---	---
-3	76-127	E2	0.02	0.01	0.00	0.01	0.04	0.68	0.72	6	0.05	0.01	5.1	4.5	4.5	---	---	---	---	---
-4	127-165	E&B1	0.05	0.01	0.00	0.01	0.07	0.42	0.49	14	0.02	0.01	5.0	4.4	4.5	---	---	---	---	---
-5	165-203	E&B2	0.06	0.01	0.01	0.02	0.10	0.67	0.77	13	0.00	0.01	5.0	4.5	4.5	---	---	---	---	---
Florahome sand:																				
S84FL-119-018-1	0-25	Ap	1.26	0.21	0.02	0.04	1.53	6.01	7.54	20	0.90	0.00	5.3	4.8	4.9	---	---	---	---	---
-2	25-51	A	0.19	0.07	0.03	0.01	0.30	4.65	4.95	6	0.57	0.00	5.2	4.7	4.6	---	---	---	---	---
-3	51-84	AC	0.08	0.03	0.02	0.01	0.14	3.20	3.34	4	0.23	0.00	4.8	4.7	4.7	---	---	---	---	---
-4	84-104	C1	0.10	0.04	0.02	0.02	0.18	2.93	3.11	6	0.18	0.00	4.9	4.7	4.7	---	---	---	---	---
-5	104-183	C2	0.11	0.06	0.01	0.02	0.20	2.47	2.67	7	0.07	0.00	4.7	4.6	4.7	---	---	---	---	---
-6	183-203	C3	0.08	0.04	0.01	0.01	0.14	2.79	2.93	5	0.06	0.00	4.7	4.7	5.0	---	---	---	---	---
Ft. Green fine sand:																				
S83FL-119-015-1	0-15	Ap	11.25	0.32	0.01	0.04	11.62	1.92	13.54	86	1.50	0.03	6.7	6.7	6.8	---	---	---	---	---
-2	15-36	E1	1.05	0.02	0.00	0.01	1.08	0.01	1.09	99	0.11	0.00	7.0	6.9	7.0	---	---	---	---	---
-3	36-71	E2	0.60	0.01	0.00	0.00	0.61	0.66	1.27	48	0.02	0.00	6.9	6.6	6.9	---	---	---	---	---
-4	71-96	Btg1	9.50	0.02	0.04	0.07	9.63	3.63	13.26	73	0.01	0.01	6.8	6.7	6.5	0.14	0.06	0.05	0.04	0.04
-5	96-147	Btg2	13.25	0.04	0.06	0.10	13.45	6.52	19.97	67	0.07	0.01	6.7	6.5	6.4	0.04	0.02	0.04	0.08	0.04
-6	147-203	BC	15.00	0.08	0.08	0.08	15.24	7.44	22.68	67	0.09	0.01	6.6	6.2	6.1	0.05	0.02	0.03	0.07	0.03

TABLE 18.--CHEMICAL ANALYSES OF SELECTED SOILS--Continued

Soil series and sample number*	Depth	Horizon	Extractable bases					Extractable acidity	Sum of cations	Base saturation	Organic carbon	Electrical conductivity	pH			Pyrophosphate extractable			Citrate dithionite extractable	
			Ca	Mg	Na	K	Sum						H_2O (1:1)	$CaCl_2$ (1:2)	KCl (1:1)	C	Fe	Al	Fe	Al
	cm		----Milliequivalents/100 grams of soil---							Pct	Pct	Mmho/cm				Pct	Pct	Pct	Pct	Pct
Lake fine sand:																				
S84FL-119-017-1	0-22	Ap	0.70	0.23	0.02	0.06	1.01	4.88	5.89	17	1.09	0.00	5.1	4.4	4.5	---	---	---	---	---
-2	22-58	C1	0.19	0.05	0.02	0.02	0.28	3.10	3.38	8	0.26	0.00	5.1	4.5	4.6	---	---	---	---	---
-3	58-99	C2	0.19	0.07	0.01	0.01	0.28	2.21	2.49	11	0.15	0.00	5.3	4.6	4.7	---	---	---	---	---
-4	99-160	C3	0.23	0.10	0.02	0.02	0.37	3.22	3.59	10	0.07	0.00	5.3	4.6	4.7	---	---	---	---	---
-5	160-203	C4	0.18	0.11	0.01	0.01	0.31	2.97	3.28	9	0.05	0.00	5.2	4.5	4.7	---	---	---	---	---
Mabel fine sand:																				
S83FL-119-011-1	0-15	A	2.20	0.31	0.06	0.06	2.63	3.02	5.65	47	1.16	0.01	5.0	4.6	4.7	---	---	---	---	---
-2	15-25	E1	1.04	0.21	0.03	0.01	1.29	1.04	2.33	55	0.37	0.00	5.4	4.9	5.1	---	---	---	---	---
-3	25-41	E2	0.69	0.11	0.03	0.01	0.84	0.67	1.51	56	0.21	0.00	5.6	5.1	5.3	---	---	---	---	---
-4	41-61	Bt1	10.57	0.39	0.09	0.06	11.28	5.42	16.70	68	0.59	0.01	6.0	5.5	5.5	---	---	---	0.07	0.04
-5	61-76	Bt2	43.00	0.49	0.18	0.13	43.80	5.75	49.55	88	0.71	0.01	7.6	7.2	7.2	---	---	---	0.01	0.03
-6	76-109	Ck1	44.75	0.40	0.18	0.12	45.45	5.50	50.95	89	0.26	0.01	8.3	4.4	7.3	---	---	---	---	---
-7	109-142	Ck2	1.75	0.35	0.17	0.11	42.38	4.20	46.58	91	0.17	0.01	8.0	7.7	7.6	---	---	---	---	---
-8	142-203	Ck3	40.00	0.36	0.17	0.10	41.54	4.09	45.63	91	0.09	0.01	8.0	7.6	7.6	---	---	---	---	---
Millhopper sand:																				
S82FL-119-006-1	0-13	Ap	1.26	0.41	0.03	0.10	1.80	4.43	6.23	29	1.06	0.04	5.2	4.6	4.5	---	---	---	---	---
-2	13-81	E1	0.09	0.09	0.01	0.01	0.20	1.74	1.94	10	0.18	0.01	5.3	4.7	4.5	---	---	---	---	---
-3	81-112	E2	0.05	0.09	0.01	0.01	0.16	0.42	0.58	28	0.05	0.01	5.2	4.7	4.6	---	---	---	---	---
-4	112-127	EB	0.18	0.37	0.02	0.03	0.60	1.14	1.74	34	0.02	0.02	5.1	4.5	4.3	---	---	---	---	---
-5	127-142	Bt	0.52	1.36	0.06	0.04	1.98	4.22	6.20	32	0.03	0.03	4.5	4.2	4.0	---	---	---	0.40	0.14
-6	142-183	Btg1	0.17	1.07	0.10	0.03	1.37	7.87	9.24	15	0.06	0.03	4.9	3.8	3.8	---	---	---	0.98	0.13
-7	183-203	Btg2	0.14	0.45	0.14	0.03	0.76	6.82	7.58	10	0.04	0.03	5.0	3.7	3.9	---	---	---	0.96	0.12
Myakka sand:																				
S83FL-119-010-1	0-15	A	4.32	0.78	0.12	0.11	5.33	13.07	18.40	29	4.23	0.01	4.7	4.1	4.2	---	---	---	---	---
-2	15-30	E1	0.35	0.08	0.05	0.01	0.49	3.44	3.93	12	0.52	0.00	4.8	4.0	4.0	---	---	---	---	---
-3	30-64	E2	0.13	0.05	0.03	0.01	0.22	2.49	2.71	8	0.22	0.00	4.9	4.2	4.3	---	---	---	---	---
-4	64-79	Bh1	0.24	0.18	0.07	0.02	0.51	25.39	25.90	2	3.22	0.01	4.0	3.4	3.5	1.57	0.01	0.14	0.01	0.11
-5	79-102	Bh2	0.05	0.06	0.05	0.01	0.17	17.37	17.54	1	1.87	0.01	4.2	3.7	3.9	0.79	0.01	0.16	0.02	0.10
-6	102-130	C1	0.04	0.02	0.04	0.01	0.11	5.06	5.17	2	0.32	0.00	4.7	4.2	4.3	---	---	---	---	---
-7	130-203	C2	0.02	0.02	0.02	0.01	0.07	1.22	1.29	5	0.08	0.00	4.9	4.6	4.6	---	---	---	---	---
Oldsmar fine sand:																				
S83FL-119-009-1	0-13	A1	0.86	0.38	0.15	0.06	1.45	12.40	13.85	10	2.30	0.01	4.3	3.3	3.2	---	---	---	---	---
-2	13-23	A2	0.35	0.13	0.05	0.02	0.55	7.20	7.75	7	0.94	0.01	4.4	3.4	3.3	---	---	---	---	---
-3	23-43	E1	0.06	0.03	0.02	0.01	0.12	2.54	2.66	5	0.14	0.00	4.7	3.9	4.0	---	---	---	---	---
-4	43-79	E2	0.10	0.06	0.02	0.01	0.19	2.39	2.58	7	0.11	0.00	4.9	4.4	4.4	---	---	---	---	---
-5	79-96	Bh1	0.39	0.09	0.04	0.01	0.53	16.72	17.25	3	1.80	0.00	4.4	3.7	3.8	0.89	0.01	0.12	0.02	0.09
-6	96-122	Bh2	1.27	0.11	0.06	0.01	1.45	14.46	15.91	9	1.31	0.01	4.8	4.2	4.2	0.68	0.02	0.18	0.02	0.10
-7	122-178	Btg1	9.65	0.39	0.16	0.05	10.25	10.71	20.96	49	0.45	0.00	5.0	4.4	4.1	---	---	---	0.06	0.04
-8	178-203	Btg2	11.10	0.41	0.17	0.07	11.75	7.94	19.69	60	0.40	0.00	5.2	4.6	4.3	---	---	---	0.04	0.03

TABLE 18.--CHEMICAL ANALYSES OF SELECTED SOILS--Continued

Soil series and sample number*	Depth	Horizon	Extractable bases					Extractable acidity	Sum of cations	Base saturation	Organic carbon	Electrical conductivity	pH			Pyrophosphate extractable			Citrate dithionite extractable	
			Ca	Mg	Na	K	Sum						H_2O (1:1)	$CaCl_2$ (1:2)	KCl (1:1)	C	Fe	Al	Fe	Al
	cm		----Milliequivalents/100 grams of soil---							Pct	Pct	Mmho/cm				Pct	Pct	Pct	Pct	Pct
Sparr fine sand:																				
S82FL-119-007-1	0-23	A	0.36	0.12	0.04	0.03	0.55	7.68	8.23	7	0.66	0.02	4.9	3.8	3.4	---	---	---	---	---
-2	23-43	E1	0.11	0.07	0.02	0.00	0.20	2.29	2.49	8	0.25	0.02	5.1	4.2	4.1	---	---	---	---	---
-3	43-74	E2	0.07	0.01	0.02	0.00	0.10	1.88	1.98	5	0.13	0.01	5.1	4.4	4.3	---	---	---	---	---
-4	74-114	E3	0.06	0.07	0.02	0.01	0.16	0.66	0.82	20	0.04	0.01	5.3	4.5	4.5	---	---	---	---	---
-5	114-130	Btg1	0.41	1.27	0.07	0.02	1.77	2.73	4.50	39	0.14	0.02	5.0	4.2	4.2	---	---	---	0.18	0.07
-6	130-180	Btg2	0.12	0.82	0.14	0.04	1.12	7.99	9.11	12	0.10	0.03	4.8	3.8	3.8	---	---	---	0.36	0.10
-7	180-203	Btg3	0.04	0.23	0.12	0.04	0.43	5.77	6.20	7	0.08	0.03	4.8	3.8	3.8	---	---	---	0.16	0.07
Sumterville fine sand:																				
S82FL-119-004-1	0-23	Ap	1.19	0.18	0.01	0.04	1.42	3.38	4.80	30	0.83	0.02	5.0	4.5	4.4	---	---	---	---	---
-2	23-61	E1	0.58	0.02	0.01	0.01	0.61	1.75	2.36	26	0.23	0.01	5.3	4.8	4.7	---	---	---	---	---
-3	61-74	E2	0.35	0.03	0.01	0.01	0.40	1.02	1.42	28	0.15	0.01	5.4	4.8	4.6	---	---	---	---	---
-4	74-119	Btg1	8.90	0.95	0.18	0.17	10.20	10.91	21.11	48	0.11	0.01	5.3	4.1	3.8	---	---	---	0.48	0.10
-5	119-160	Btg2	13.90	1.48	0.28	0.29	15.95	16.84	32.79	49	0.06	0.01	5.4	4.2	3.9	---	---	---	0.20	0.10
-6	160-203	Btg3	14.55	1.15	0.30	0.24	16.24	10.50	26.74	61	0.04	0.03	5.7	4.8	4.6	---	---	---	0.01	0.04
Tarrytown sandy clay loam:																				
S83FL-119-014-1	0-18	Ap	32.75	0.90	0.08	0.24	33.97	5.70	39.67	66	1.96	0.01	7.5	7.3	7.4	---	---	---	---	---
-2	18-25	Btk1	32.50	0.74	0.13	0.13	33.50	6.35	39.85	84	0.82	0.02	7.7	7.5	7.5	---	---	---	0.05	0.02
-3	25-36	Btk2	42.00	0.99	0.17	0.13	43.29	9.06	52.35	83	0.60	0.01	7.8	7.7	7.4	---	---	---	0.04	0.03
-4	36-56	Ck1	33.00	0.45	0.18	0.07	33.70	4.27	37.97	89	0.89	0.02	7.8	7.6	7.7	---	---	---	---	---
-5	56-127	Ck2	26.50	0.33	0.13	0.08	27.04	2.94	29.98	90	0.34	0.01	8.1	7.8	7.9	---	---	---	---	---
-6	127-203	C	2.77	0.09	0.03	0.03	2.92	1.40	4.32	68	0.01	0.01	8.6	7.8	8.6	---	---	---	---	---

* All of the soils are the typical pedon for the series in this survey area. For location of the sample site, see the series description in the section "Soil Series and Their Morphology."

TABLE 19.--CLAY MINERALOGY OF SELECTED SOILS

Soil series and sample number*	Depth	Horizon	Clay minerals				
			Montmorillonite	14 angstrom intergrade	Kaolinite	Quartz	Calcite
	cm		Pct	Pct	Pct	Pct	Pct
Adamsville fine sand:							
S83FL-119-012-1	0-13	Ap	0	33	44	23	0
-5	74-203	C4	6	32	38	24	0
Arredondo fine sand:							
S84FL-119-016-1	0-23	Ap	0	38	47	15	0
-5	145-160	Bt1	12	15	59	14	0
-6	160-203	Bt2	22	13	53	12	0
Candler sand:							
S82FL-119-005-1	0-13	Ap	0	40	41	19	0
-3	76-127	E2	0	43	34	22	1
-5	165-203	E&B2	9	31	40	19	1
Florahome sand:							
S84FL-119-018-1	0-25	Ap	0	37	37	26	0
-4	84-104	C1	0	29	42	29	0
-6	183-203	C3	0	26	37	37	0
Ft. Green fine sand:							
S83FL-119-015-1	0-15	Ap	38	14	13	35	0
-4	71-96	Btg1	46	13	25	16	0
-6	147-203	BC	81	7	5	7	0
Lake fine sand:							
S84FL-119-017-1	0-22	Ap	0	43	40	17	0
-3	58-99	C2	0	48	41	11	0
-5	160-203	C4	0	46	45	9	0
Mabel fine sand:							
S83FL-119-011-1	0-15	A	26	28	21	25	0
-5	61-76	Bt2	21	20	48	11	0
-8	142-203	Ck3	41	13	35	11	0
Millhopper sand:							
S82FL-119-006-1	0-13	Ap	9	36	32	22	1
-5	127-142	Bt	14	27	52	7	0
-7	183-203	Btg2	13	13	65	9	0
Myakka sand:							
S83FL-119-010-1	0-15	A	23	0	9	68	0
-4	64-79	Bh1	15	30	18	37	0
-7	130-203	C2	23	27	21	29	0
Oldsmar fine sand:							
S83FL-119-009-1	0-13	A1	0	0	0	100	0
-5	79-96	Bh1	0	37	15	48	0
-7	122-178	Btg1	0	23	67	10	0
Sparr fine sand:							
S82FL-119-007-1	0-23	A	10	30	21	38	1
-5	114-130	Btg1	8	34	51	7	0
-7	180-203	Btg3	6	5	80	9	0
Sumterville fine sand:							
S82FL-119-004-1	0-23	Ap	0	35	39	24	1
-4	74-119	Btg1	30	13	51	6	0
-6	160-203	Btg3	48	14	34	4	0
Tarrytown sandy clay loam:							
S83FL-119-014-1	0-18	Ap	91	4	2	3	0
-3	25-36	Btk2	89	6	2	3	0
-6	127-203	C	89	0	8	3	0

---

* All of the soils are the typical pedon for the series in this survey area. For location of the sample site, see the series description in the section "Soil Series and Their Morphology."

TABLE 20.--ENGINEERING INDEX TEST DATA

[Tests performed by the Florida Department of Transportation (FDOT) in cooperation with the U.S. Bureau of Public Roads, in accordance with standard procedures of the American Association of State Highway and Transportation Officials (AASHTO). NP means nonplastic]

Soil name, sample number, horizon and depth in inches*	FDOT report number	Classification		Grain-size distribution**							Liquid limit	Plasticity index	Moisture density***	
				Percentage passing sieve			Percentage smaller than--							
		AASHTO ****	Unified (Estimated)	No. 10	No. 40	No. 200	.05 mm	.02 mm	.005 mm	.002 mm			Maximum dry density	Optimum moisture
											Pct		Lb/ft	Pct
Adamsville fine sand: (S83FL-119-012)														
C3------------ 17-29	13	A-3(0)	SP-SM	100	97	7	5	3	1	1	---	NP	110	11
Arredondo fine sand: (S84FL-119-016)														
Bt2----------- 63-80	17	A-2-6(1)	SC	100	87	31	31	30	29	24	34	18	112	16
Candler sand: (S82FL-119-005)														
E1------------ 8-30	5	A-3(0)	SP-SM	100	64	5	3	2	1	0	---	NP	111	12
Florahome sand: (S84FL-119-018)														
Ap------------ 0-10	19	A-3(0)	SP-SM	100	88	8	8	7	5	4	---	NP	112	11
C2------------ 41-72	20	A-3(0)	SP-SM	100	92	7	6	4	2	1	---	NP	112	11
Ft. Green fine sand: (S83FL-119-015)														
Btg1---------- 28-38	16	A-2-6(1)	SC	100	97	34	29	26	24	24	27	15	116	13
Lake fine sand: (S84FL-119-017)														
C3------------ 39-63	18	A-3(0)	SP-SM	100	92	8	7	7	5	4	---	NP	113	11
Mabel fine sand: (S83FL-119-011)														
Bt1----------- 16-24	12	A-7-6(14)	CH	100	98	52	51	47	44	39	50	36	98	23
Millhopper sand: (S82FL-119-006)														
Btg1---------- 56-72	6	A-2-6(1)	SC	100	97	33	31	29	28	28	33	18	112	15

TABLE 20.--ENGINEERING INDEX TEST DATA--Continued

Soil name, sample number, horizon and depth in inches *	FDOT report number	Classification		Grain-size distribution**							Liquid limit	Plasticity index	Moisture density***	
		AASHTO ****	Unified (Estimated)	Percentage passing sieve			Percentage smaller than--						Maximum dry density	Optimum moisture
				No. 10	No. 40	No. 200	.05 mm	.02 mm	.005 mm	.002 mm				
											Pct		Lb/ft	Pct
Myakka sand: (S83FL-119-010) Bh1----------- 25-31	11	A-2-4(0)	SP-SM	100	93	11	8	3	1	1	---	NP	99	16
Oldsmar fine sand: (S83FL-119-009)														
Bh1----------- 31-38	9	A-2-4(0)	SM	100	95	13	10	6	4	3	---	NP	108	12
Btg1---------- 48-70	10	A-7-6(5)	SC	100	97	37	36	34	30	30	41	29	108	16
Sparr fine sand: (S82FL-119-007) Btg2---------- 51-71	7	A-7-6(4)	SC	100	96	38	36	32	31	31	43	26	109	16
Sumterville fine sand: (S82FL-119-004) Btg1---------- 29-47	4	A-7-6(14)	CH	100	98	51	51	48	46	46	52	35	97	20
Tarrytown sandy clay loam: (S83FL-119-014) Btk2---------- 10-14	15	A-7-6(19)	CH	100	96	59	57	49	41	36	55	38	92	23

* All of the soils are the typical pedon for the series in this survey area. For location of the sample site, see the series description in the section "Soil Series and Their Morphology."

** Grain-size distribution according to AASHTO designation T88-78(1). Results by this procedure differ somewhat from results obtained by the soil survey procedure of the Soil Conservation Service (SCS). In the AASHTO procedure, the fine material is analyzed by the hydrometer method and the various grain-sized fractions are calculated on the basis of all the material, including that coarser than 2 millimeters in diameter. In the SCS soil survey procedure, the fine material is analyzed by the pipette method and the material coarser than 2 millimeters in diameter is excluded from the calculations of grain-sized fractions. The mechanical analyses used in this table are not suitable for use in naming textural classes for soil.

*** Based on AASHTO Designation T99-74(1).

**** Based on AASHTO Designation M 145-73(1).

TABLE 21.--CLASSIFICATION OF THE SOILS

Soil name	Family or higher taxonomic class
Adamsville	Hyperthermic, uncoated Aquic Quartzipsamments
Apopka	Loamy, siliceous, hyperthermic Grossarenic Paleudults
Arents	Arents
Arredondo	Loamy, siliceous, hyperthermic Grossarenic Paleudults
Astatula	Hyperthermic, uncoated Typic Quartzipsamments
Basinger	Siliceous, hyperthermic Spodic Psammaquents
Candler	Hyperthermic, uncoated Typic Quartzipsamments
Chobee	Fine-loamy, siliceous, hyperthermic Typic Argiaquolls
Delray	Loamy, siliceous, hyperthermic Grossarenic Argiaquolls
EauGallie	Sandy, siliceous, hyperthermic Alfic Haplaquods
Electra	Sandy, siliceous, hyperthermic Arenic Ultic Haplohumods
Everglades	Euic, hyperthermic Typic Medihemists
Florahome	Sandy, siliceous, hyperthermic Quartzipsammentic Haplumbrepts
Floridana	Loamy, siliceous, hyperthermic Arenic Argiaquolls
Ft. Green	Loamy, siliceous, hyperthermic Arenic Ochraqualfs
Gator	Loamy, siliceous, euic, hyperthermic Terric Medisaprists
Immokalee	Sandy, siliceous, hyperthermic Arenic Haplaquods
Kanapaha	Loamy, siliceous, hyperthermic Grossarenic Paleaquults
Kendrick	Loamy, siliceous, hyperthermic Arenic Paleudults
Lake	Hyperthermic, coated Typic Quartzipsamments
Mabel	Fine, mixed, hyperthermic Albaquic Hapludalfs
Malabar	Loamy, siliceous, hyperthermic Grossarenic Ochraqualfs
Millhopper	Loamy, siliceous, hyperthermic Grossarenic Paleudults
Monteocha	Sandy, siliceous, hyperthermic Ultic Haplaquods
Myakka	Sandy, siliceous, hyperthermic Aeric Haplaquods
Nittaw	Fine, montmorillonitic, hyperthermic Typic Argiaquolls
Okeelanta	Sandy or sandy-skeletal, siliceous, euic, hyperthermic Terric Medisaprists
Oldsmar	Sandy, siliceous, hyperthermic Alfic Arenic Haplaquods
Ona	Sandy, siliceous, hyperthermic Typic Haplaquods
Paisley	Fine, montmorillonitic, hyperthermic Typic Albaqualfs
Placid	Sandy, siliceous, hyperthermic Typic Humaquepts
Pomello	Sandy, siliceous, hyperthermic Arenic Haplohumods
Pompano	Siliceous, hyperthermic Typic Psammaquents
Seffner	Sandy, siliceous, hyperthermic Quartzipsammentic Haplumbrepts
Smyrna	Sandy, siliceous, hyperthermic Aeric Haplaquods
Sparr	Loamy, siliceous, hyperthermic Grossarenic Paleudults
Sumterville	Clayey, mixed, hyperthermic Aquic Arenic Hapludalfs
Tarrytown	Fine-loamy, siliceous, hyperthermic Aquic Hapludalfs
Tavares	Hyperthermic, uncoated Typic Quartzipsamments
Terra Ceia	Euic, hyperthermic Typic Medisaprists
Vero	Sandy over loamy, siliceous, hyperthermic Alfic Haplaquods

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MAPS

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Su 6/4

United States
Department of
Agriculture

Soil
Conservation
Service

In cooperation with
University of Florida,
Institute of Food and
Agricultural Sciences,
Agricultural Experiment Stations
and Soil Science Department,
Florida Department of
Transportation,
and the Florida Department of
Agriculture and
Consumer Services

Soil Survey of Sumter County, Florida

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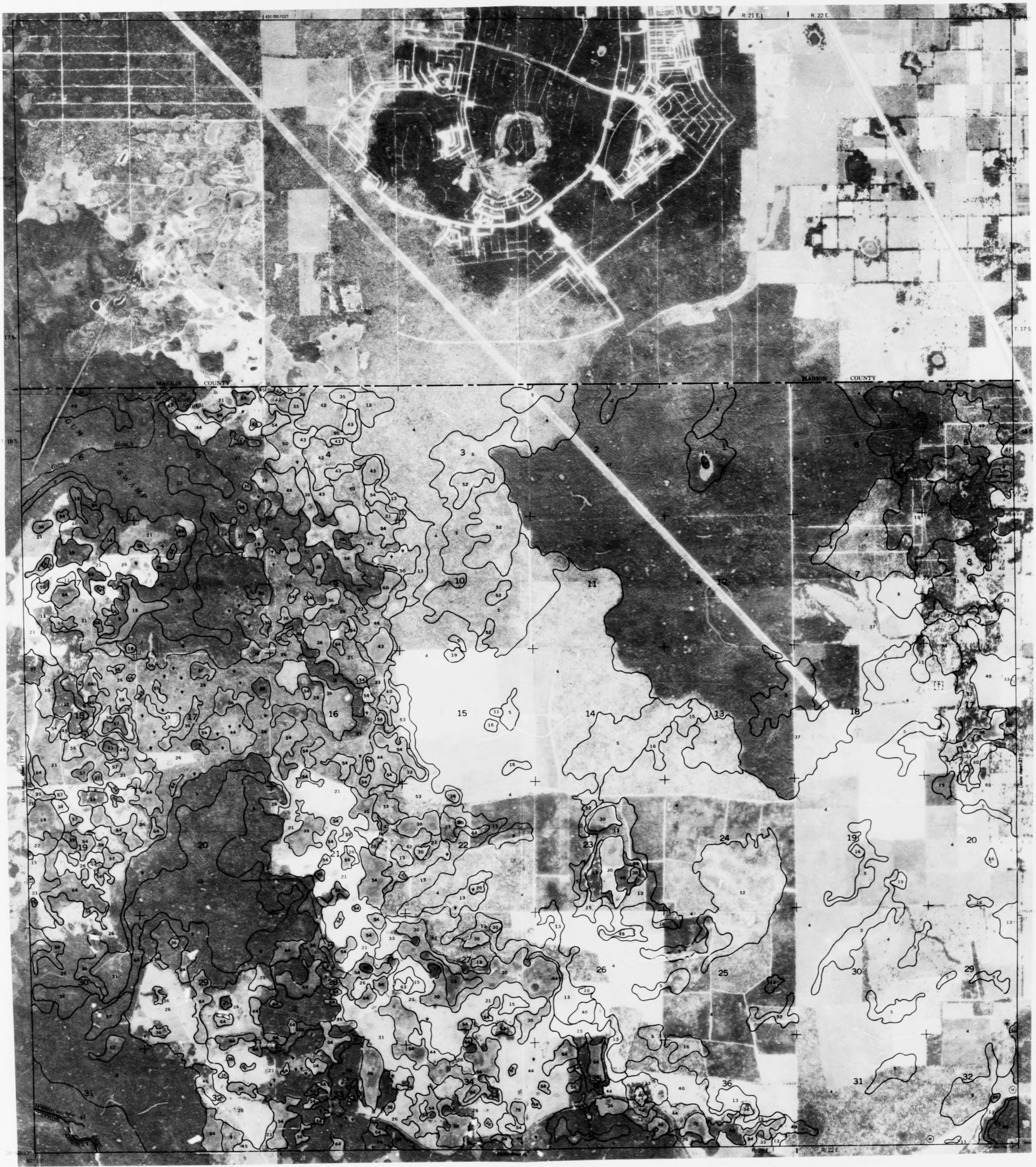
SHEET NUMBER 1
SUMTER COUNTY, FLORIDA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R. 21 E.
R. 22 E.
T. 17 S.
T. 18 S.
MARION COUNTY
MARION COUNTY
Gum Slough
SWAMP
CITRUS COUNTY
Withlacoochee
28°52'30"
82°15'
R. 21 E.
R. 22 E.
15
11
20
24
26
25
30
31
32

This soil survey map was compiled by the U. S. Department of Agriculture, Soil Conservation Service, and cooperating agencies. Base maps are prepared from 1979 aerial photography. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

5000 4000 3000 2000 1000 0 5000 10000 Feet
1 .5 0 1 2 3 Kilometers
Scale - 1:24 000

N

SUMTER COUNTY, FLORIDA NO. 1

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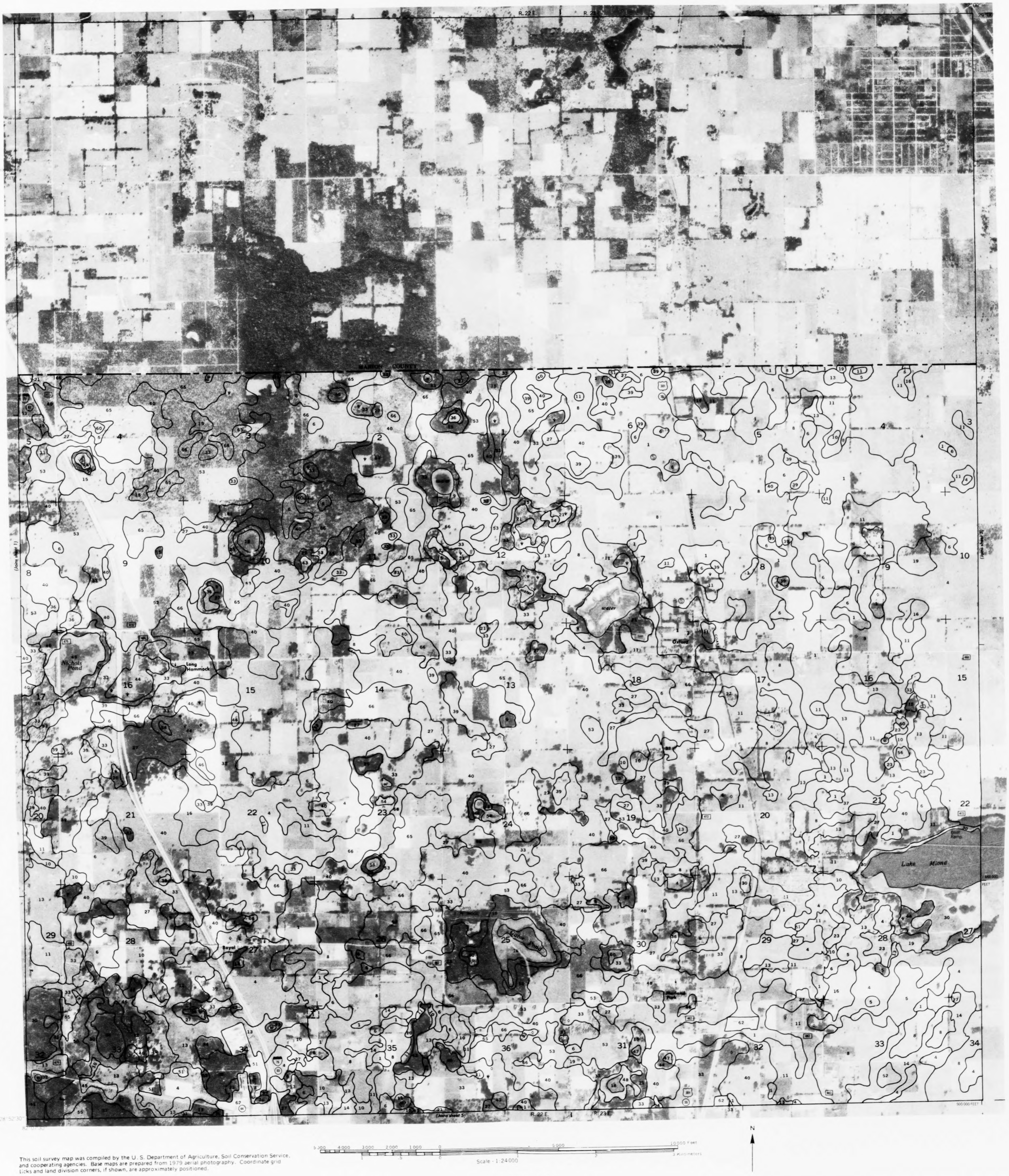
SHEET NUMBER 2
SUMTER COUNTY, FLORIDA


R.22 E.
R.23 E.
MARION COUNTY
(Joins sheet 1)
(Joins sheet 3)
(Joins sheet 5)
Nichols Pond
Long Hammock
water
Oxford
Lake Miona
Royal
28°52'30"
82°07'30"
500 000 FEET
5000 4000 3000 2000 1000 0 5000 10000 Feet
1 .5 0 1 2 3 Kilometers
Scale - 1:24000
N

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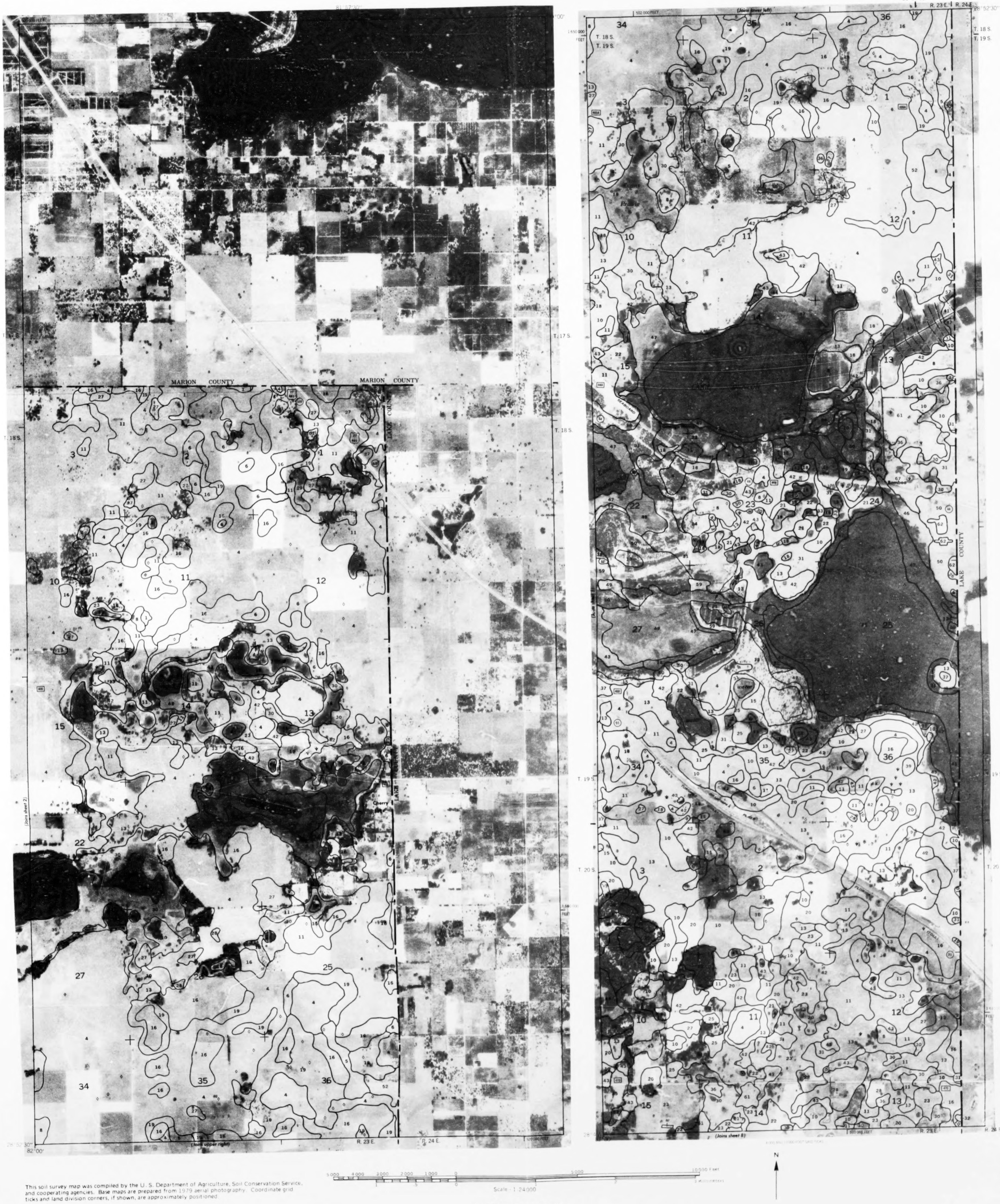
SUMTER COUNTY, FLORIDA


81°57'30"
R. 23 E. | R. 24 E.
28°52'30"
T. 17 S.
T. 18 S.
T. 19 S.
T. 20 S.
MARION COUNTY
LAKE COUNTY
(Joins sheet 2)
(Joins upper right)
(Joins lower left)
(Joins sheet 8)
Cherry Lake
Bamboo
82°00'
5000 4000 3000 2000 1000 0 5000 10000 Feet
1 .5 0 1 2 3 Kilometers
Scale 1:24000
N

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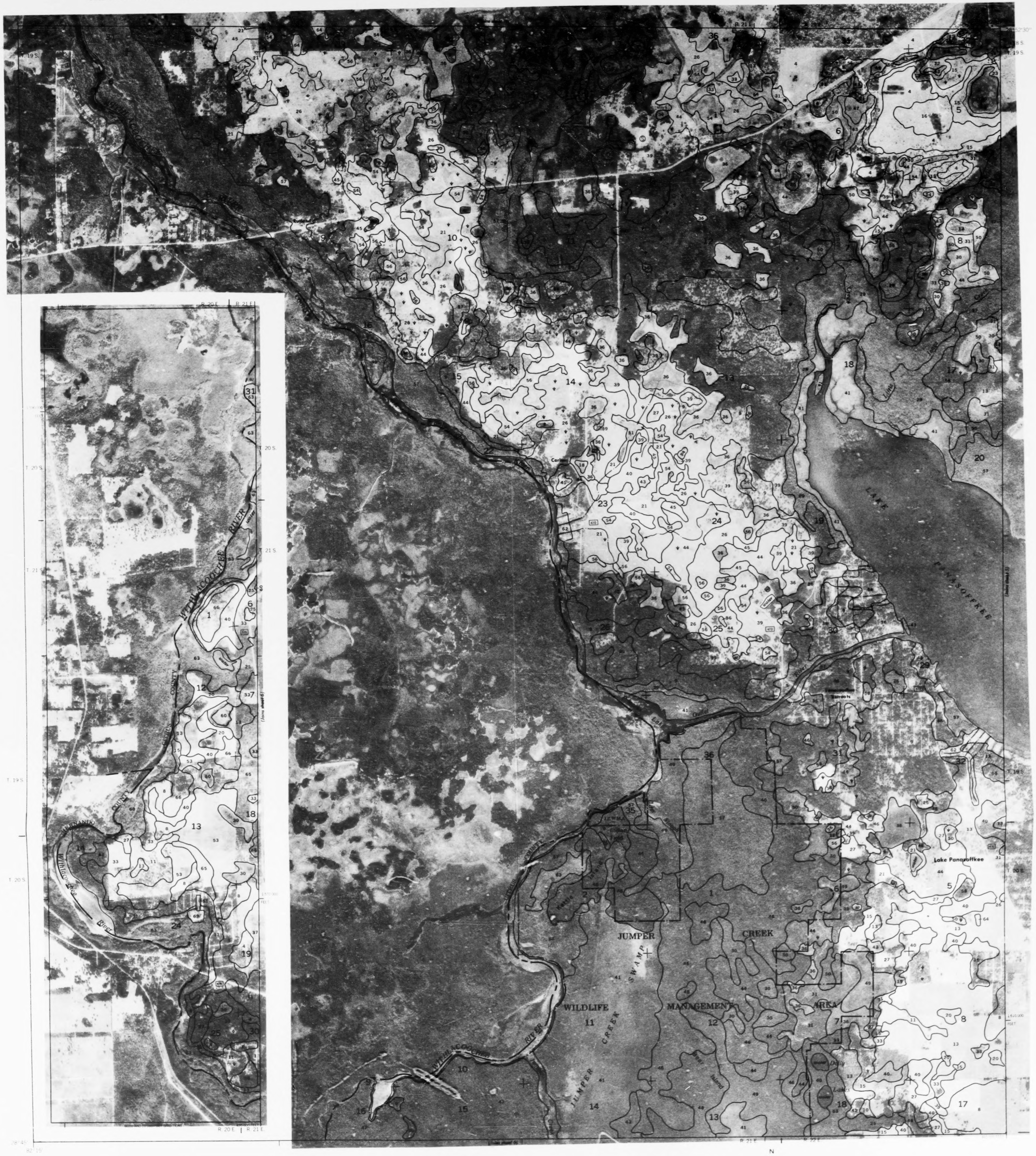
LAKE PANASOFFKEE
Lake Panasoffkee
WITHLACOOCHEE RIVER
JUMPER CREEK SWAMP
WILDLIFE MANAGEMENT AREA
JUMPER CREEK
HERNANDO COUNTY
CITRUS COUNTY
Lake Okahumpka
Outlet River
R. 20 E. | R. 21 E.
R. 21 E. | R. 22 E.
T. 19 S.
T. 20 S.
T. 21 S.
28°45'
82°15'
82°52'30"
N
5000 4000 3000 2000 1000 0 5000 10000 Feet
1 .5 0 1 2 3 Kilometers
Scale - 1:24000

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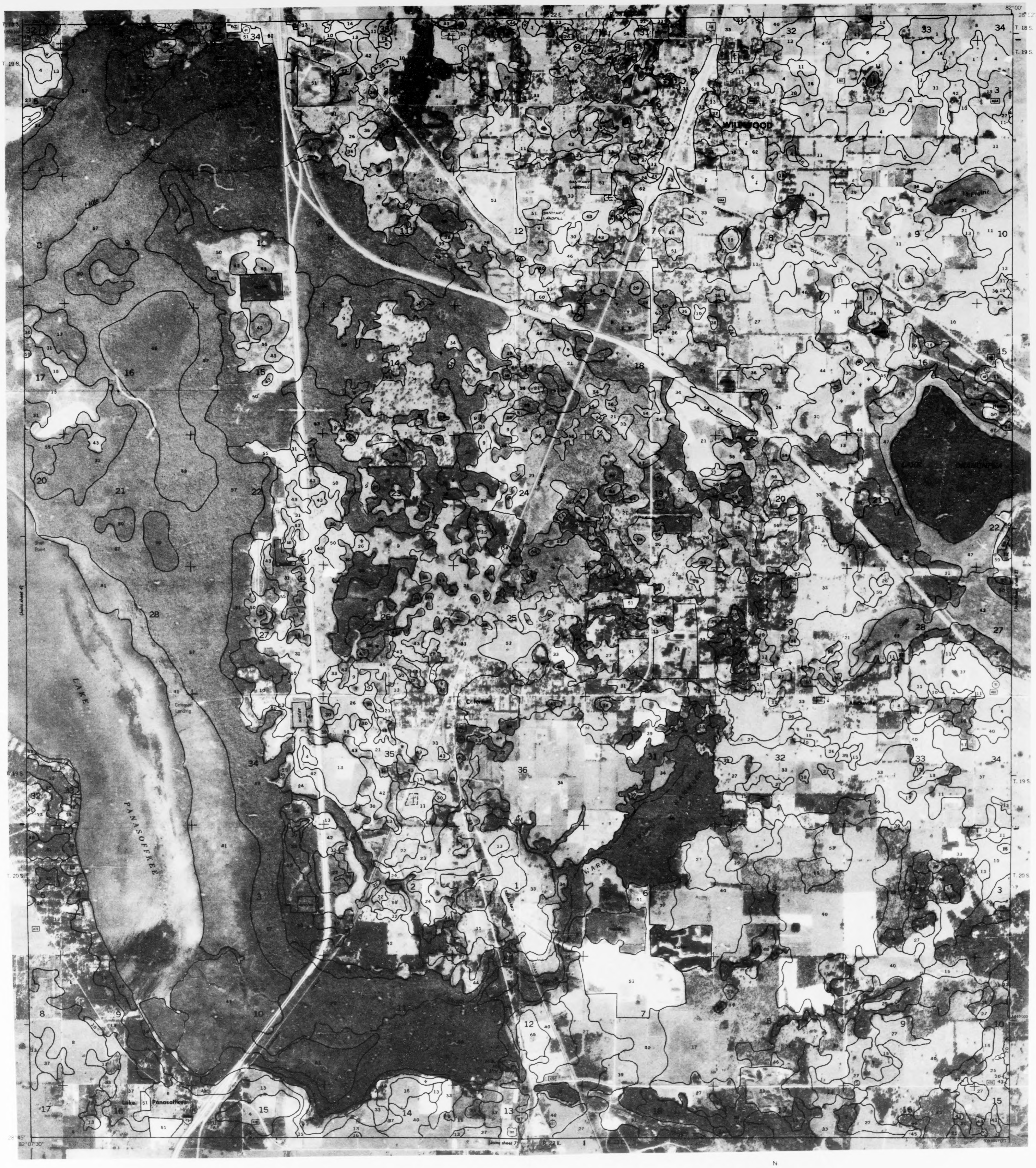
SUMTER COUNTY, FLORIDA


WILDWOOD
LAKE PANASOFFKEE
Lake Panasoffkee
Coleman
SANITARY LANDFILL
LAKE DEAKINGSA
T. 18 S.
T. 19 S.
T. 20 S.
R. 22 E.
28°45'
82°07'30"
82°00'
28°52'30"
(Joins sheet 7)
(Joins sheet 4)

N

5000 4000 3000 2000 1000 0 5000 10000 Feet
1 .5 0 1 2 3 Kilometers
Scale - 1:24000

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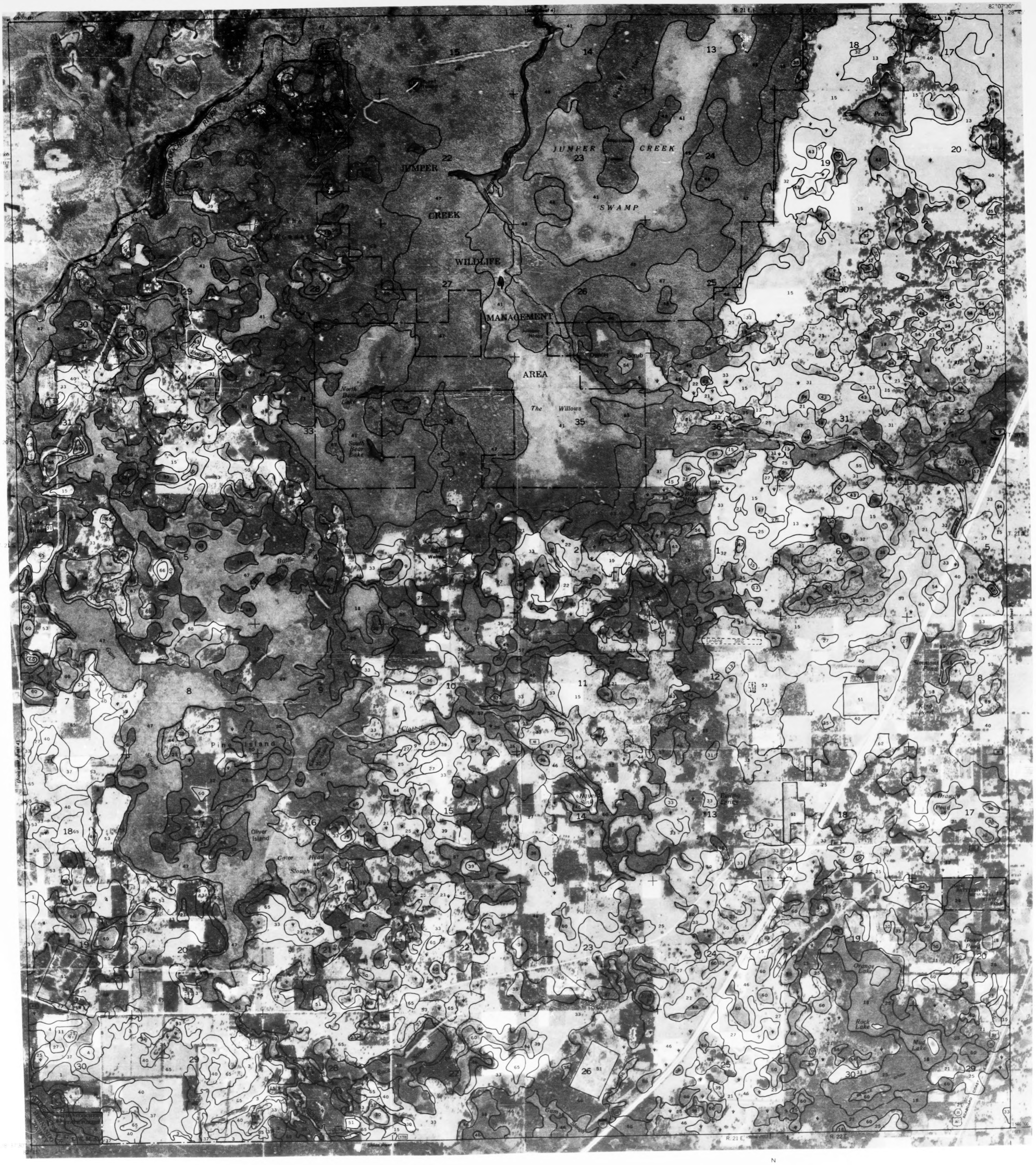
SUMTER COUNTY, FLORIDA


82°07'30"
R. 21 E.
JUMPER CREEK WILDLIFE MANAGEMENT AREA
JUMPER CREEK SWAMP
The Willows
South Buck Lake
Pine Island
Oliver Island
Gator Head Slough
Simmons Pond
King Pond
Orange Lake
Rock Lake
Mud Lake
Gum Slough
R. 21 E.
R. 22 E.
5000 4000 3000 2000 1000 0 5000 10000 Feet
1 .5 0 1 2 3 Kilometers
Scale 1:24000
N

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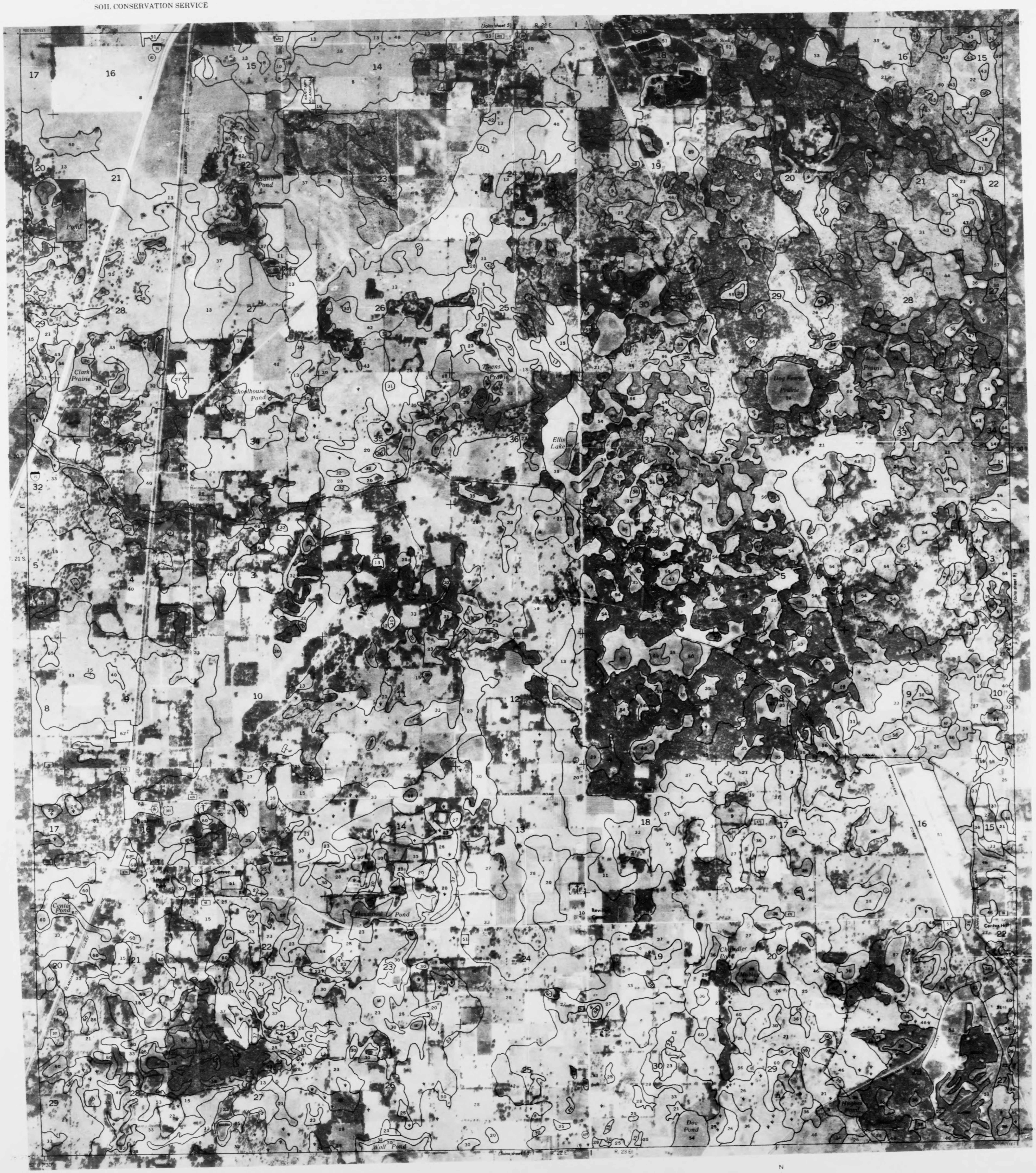
SUMTER COUNTY, FLORIDA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Clark Prairie
Schoolhouse Pond
Ellis Lake
Dog Fennel Pond
T. 21 S.
Chandler Pond
Doe Pond
Wolf Pond
(Joins sheet 10)
R. 22 E.
R. 23 E.

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1 .5 0 1 2 3 Kilometers
Scale 1:24000

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SUMTER COUNTY, FLORIDA NO. 7

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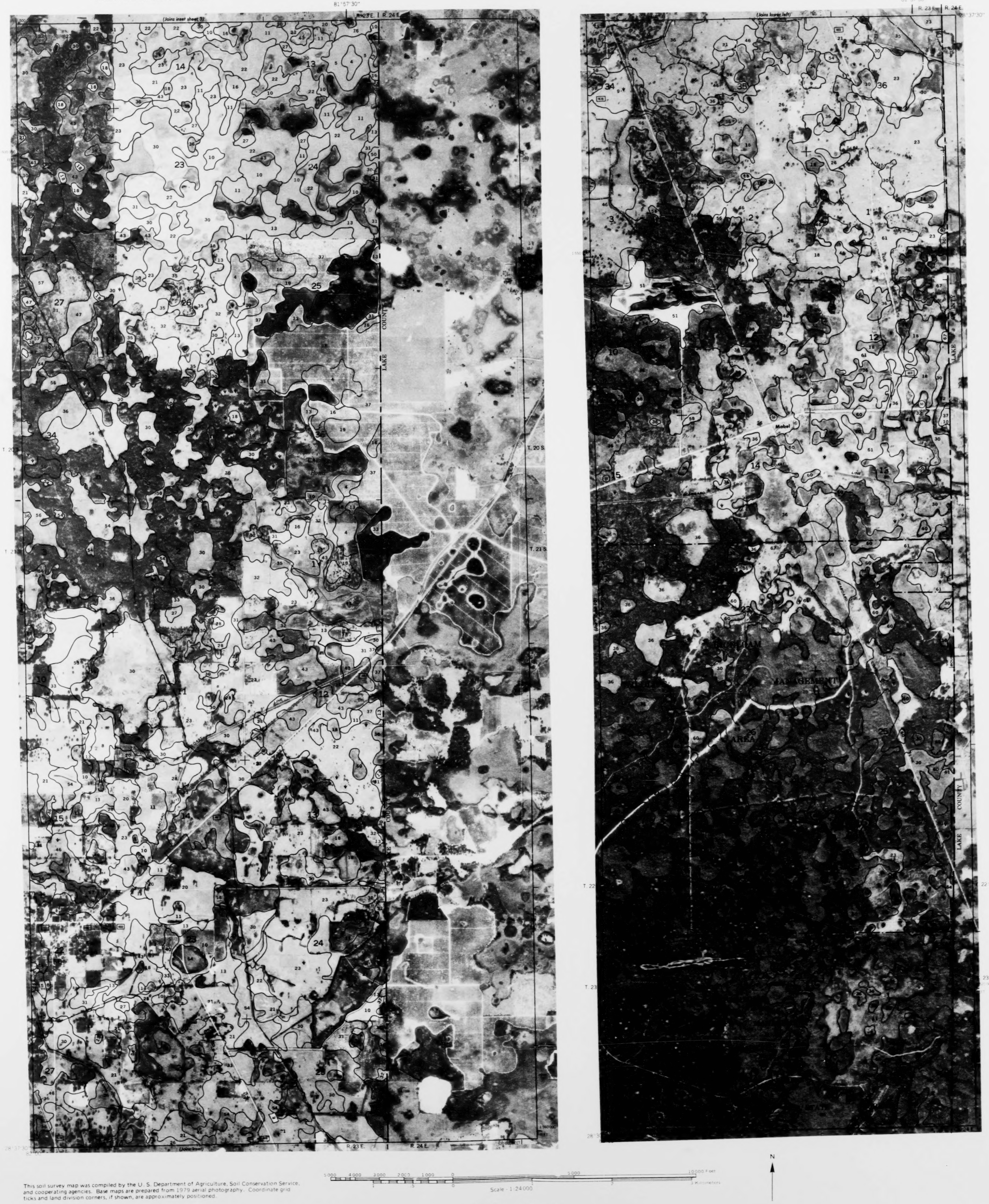
81°57'30"
(Joins inset sheet 3)
(Joins lower left)
R. 23 E.
R. 24 E.
LAKE COUNTY
T. 20 S.
T. 21 S.
T. 22 S.
T. 23 S.
Mabel
MANAGEMENT
AREA
28°37'30"
82°00'
(Joins inset)
5000
4000
3000
2000
1000
0
10000 Feet
1
.5
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3 Kilometers
Scale - 1:24000
N

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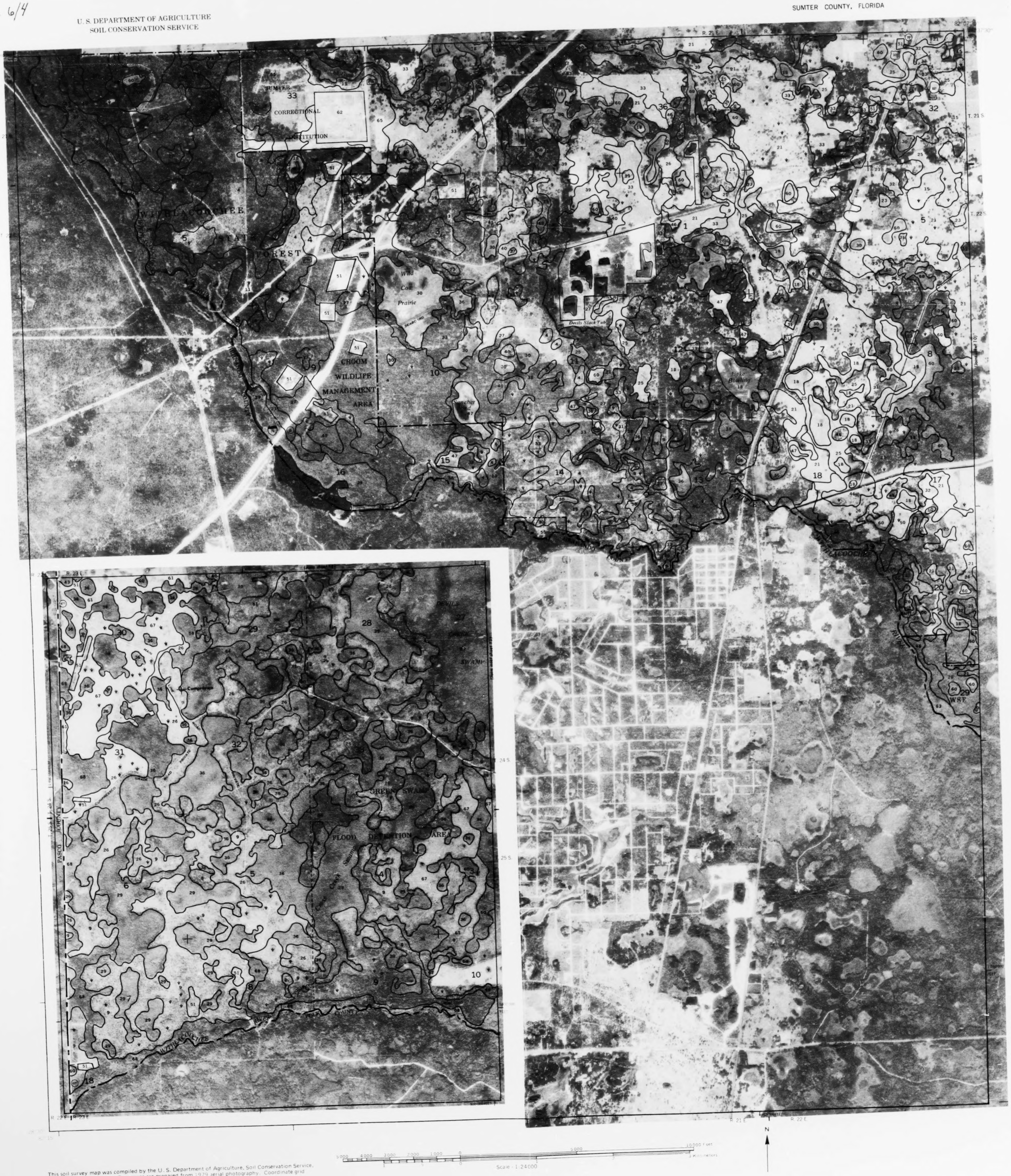
SUMTER CORRECTIONAL INSTITUTION
WITHLACOOCHEE STATE FOREST
CROOM WILDLIFE MANAGEMENT AREA
Wild Cow Prairie
GREEN SWAMP FLOOD DETENTION AREA
R. 21 E.
R. 22 E.
R. 23 E.
T. 21 S.
T. 22 S.
24 S
25 S
N
5000 4000 3000 2000 1000 0 5000 10000 Feet
1 0 1 2 3 Kilometers
Scale - 1:24000

This soil survey map was compiled by the U. S. Department of Agriculture, Soil Conservation Service, and cooperating agencies. Base maps are prepared from 1979 aerial photography. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

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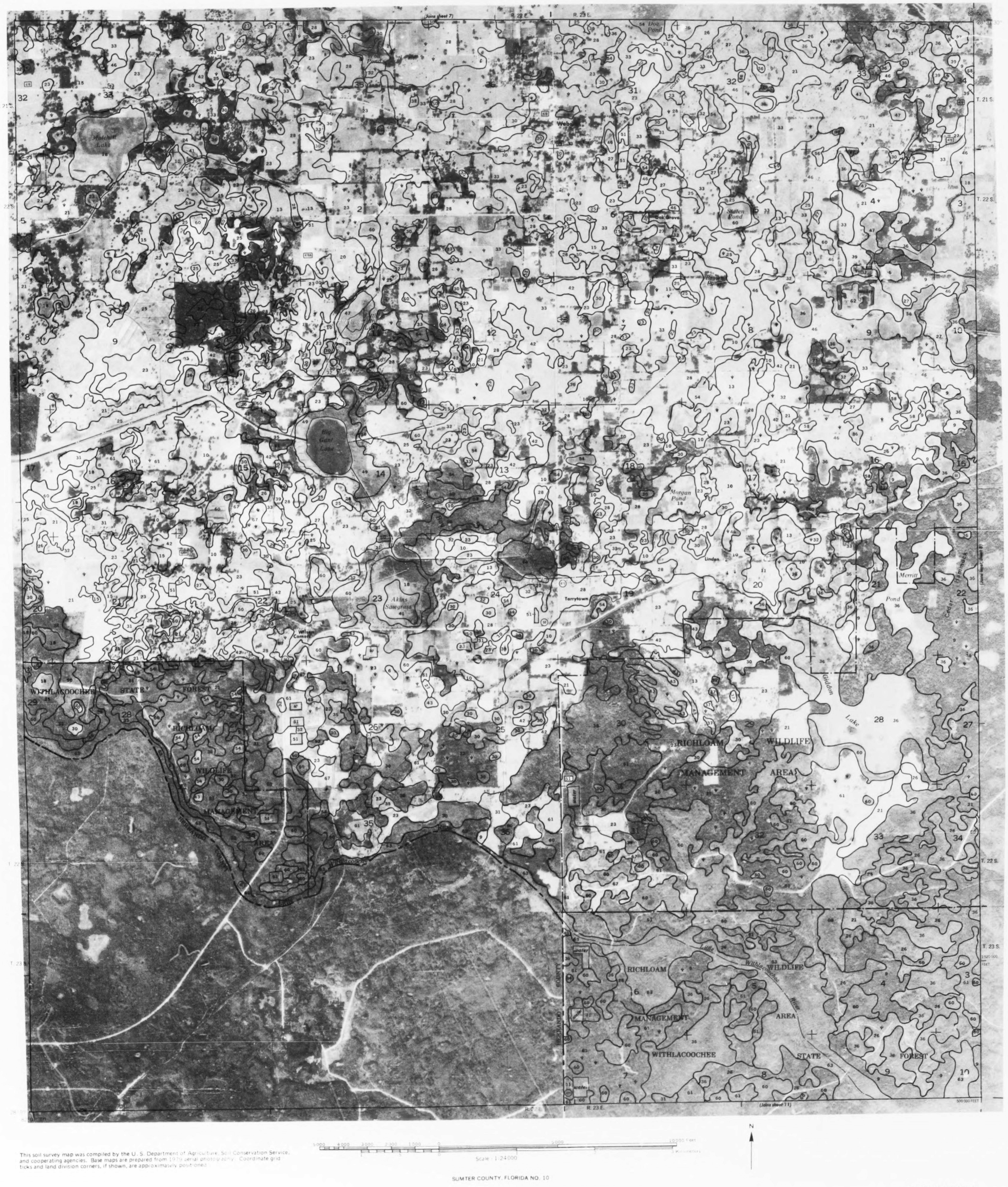
SHEET NUMBER 10
SUMTER COUNTY, FLORIDA


(Joins sheet 7)
(Joins sheet 11)
R. 22 E.
R. 23 E.
T. 21 S.
T. 22 S.
T. 23 S.
Webster
Oak Grove
Big Gant Lake
Akins Sawgrass
Morgan Pond
Linden
Tarrytown
Merritt Pond
Gilden Lake
Shallow Pond
Dee Pond
WITHLACOOCHEE STATE FOREST
RICHLOAM WILDLIFE MANAGEMENT AREA
Little Withlacoochee River
HERNANDO COUNTY
Scale 1:24000
5000
4000
3000
2000
1000
0
10000 Feet
3 Kilometers
N

This soil survey map was compiled by the U. S. Department of Agriculture, Soil Conservation Service, and cooperating agencies. Base maps are prepared from 1979 aerial photography. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

SUMTER COUNTY, FLORIDA NO. 10

SHEET NO. 10 OF 12

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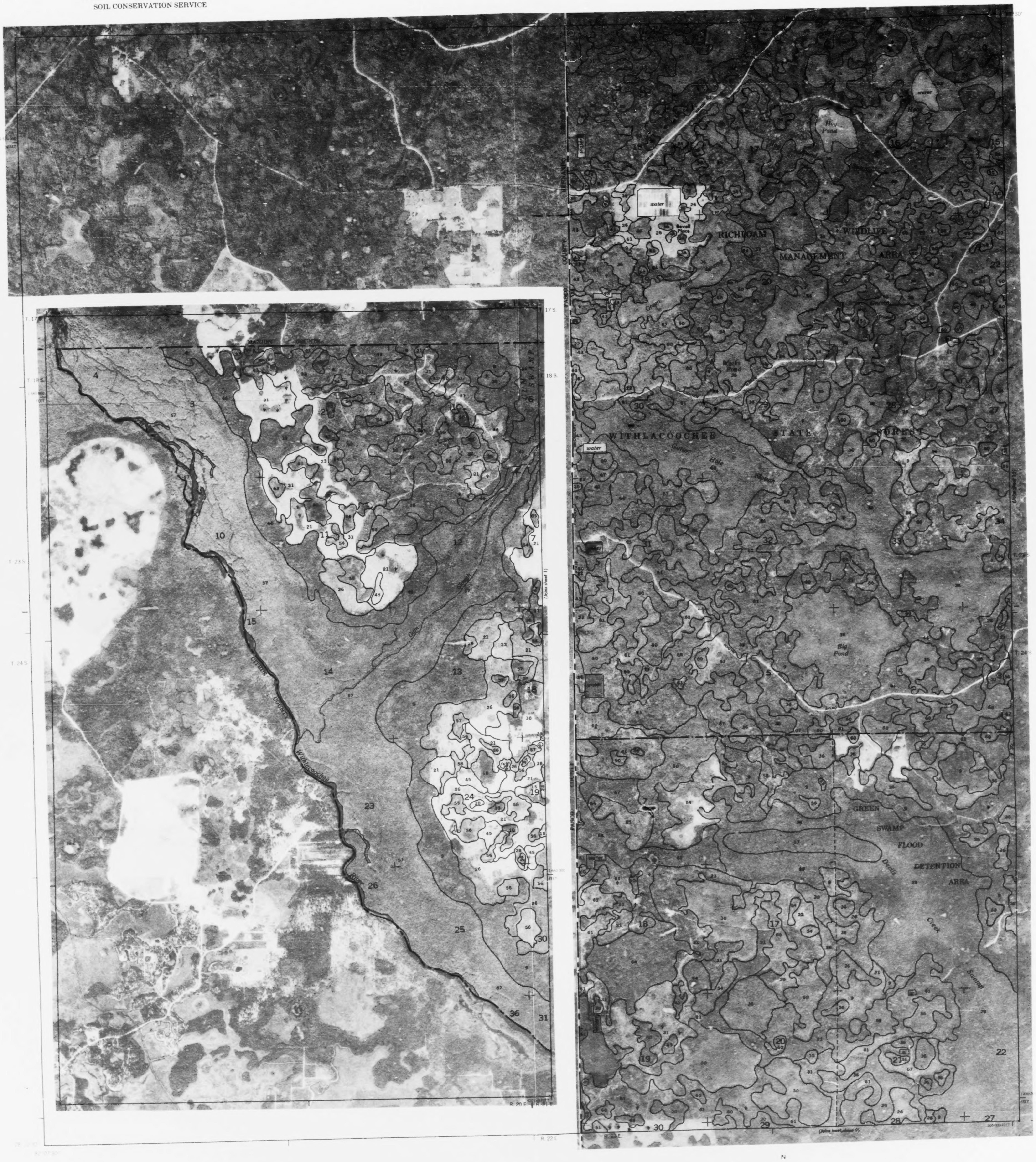
SOIL CONSERVATION SERVICE

SHEET NUMBER 11
SUMTER COUNTY, FLORIDA



water
Hog Pond
RICHLOAM
MANAGEMENT
WILDLIFE
AREA
WITHLACOOCHEE
STATE
FOREST
Big Pond
GREEN
SWAMP
FLOOD
DETENTION
AREA
Devils
Creek
Swamp
Withlacoochee River
T. 17 S.
T. 18 S.
T. 24 S.
R. 20 E.
R. 21 E.
R. 22 E.
(Joins inset, sheet 9)
(Joins sheet 1)

This soil survey map was compiled by the U. S. Department of Agriculture, Soil Conservation Service, and cooperating agencies. Base maps are prepared from 1979 aerial photography. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

5000 4000 3000 2000 1000 0 5000 10000 Feet
1 .5 0 1 2 3 Kilometers
Scale 1:24 000

N

SUMTER COUNTY, FLORIDA NO. 11

SHEET NO. 11 OF 12

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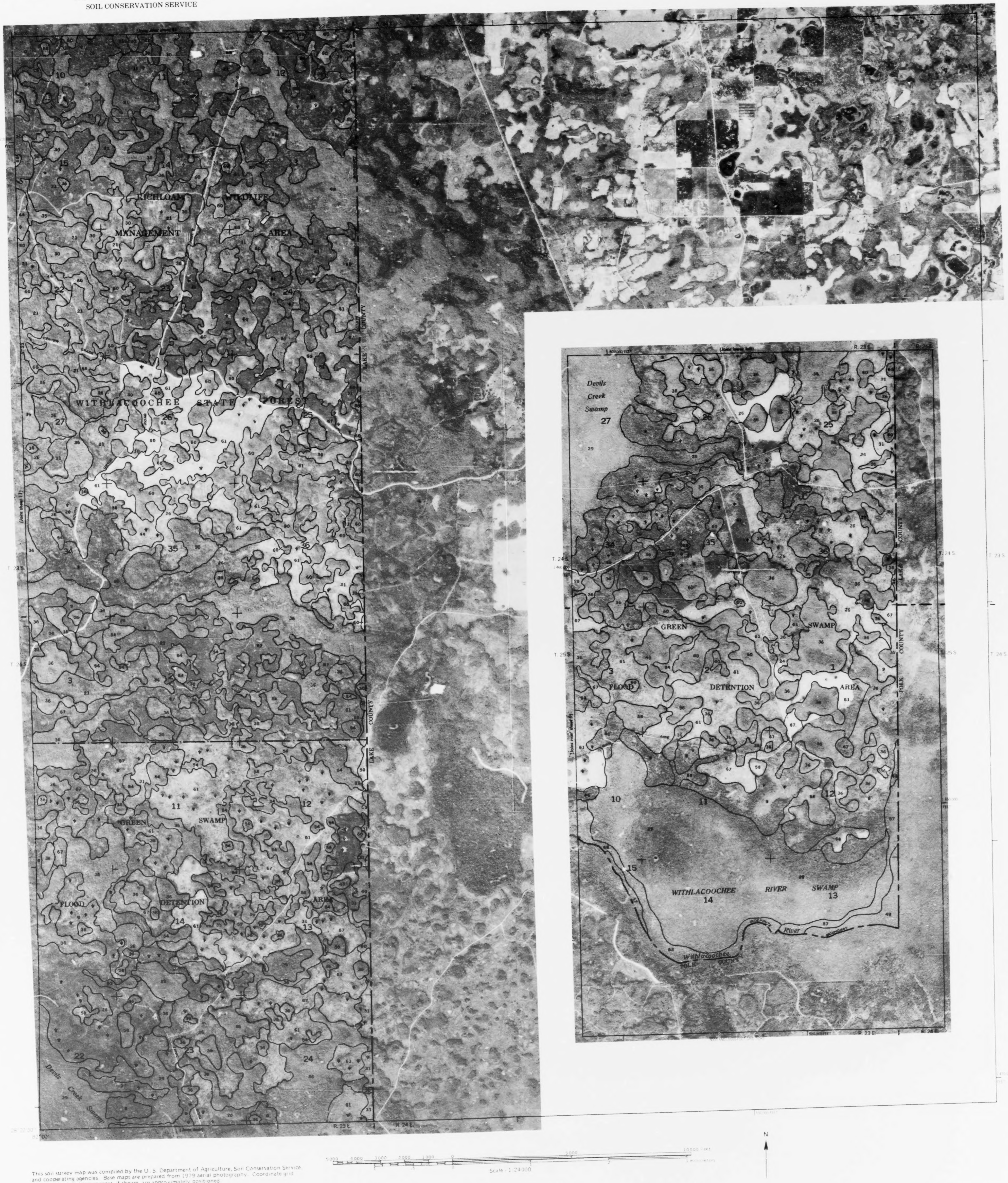
U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SHEET NUMBER 12
SUMTER COUNTY, FLORIDA


RICHLOAM WILDLIFE MANAGEMENT AREA
WITHLACOOCHEE STATE FOREST
GREEN SWAMP FLOOD DETENTION AREA
LAKE COUNTY
Devils Creek Swamp
WITHLACOOCHEE RIVER SWAMP
Withlacoochee River
POLK COUNTY
T. 23 S.
T. 24 S.
T. 25 S.
R. 23 E.
R. 24 E.
28°22'30"
82°00'
5000
4000
3000
2000
1000
0
5000
10000 Feet
1
.5
0
1
2
3 Kilometers
Scale 1:24000
N

This soil survey map was compiled by the U. S. Department of Agriculture, Soil Conservation Service, and cooperating agencies. Base maps are prepared from 1979 aerial photography. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

SUMTER COUNTY, FLORIDA NO. 12

SHEET NO. 12 OF 12

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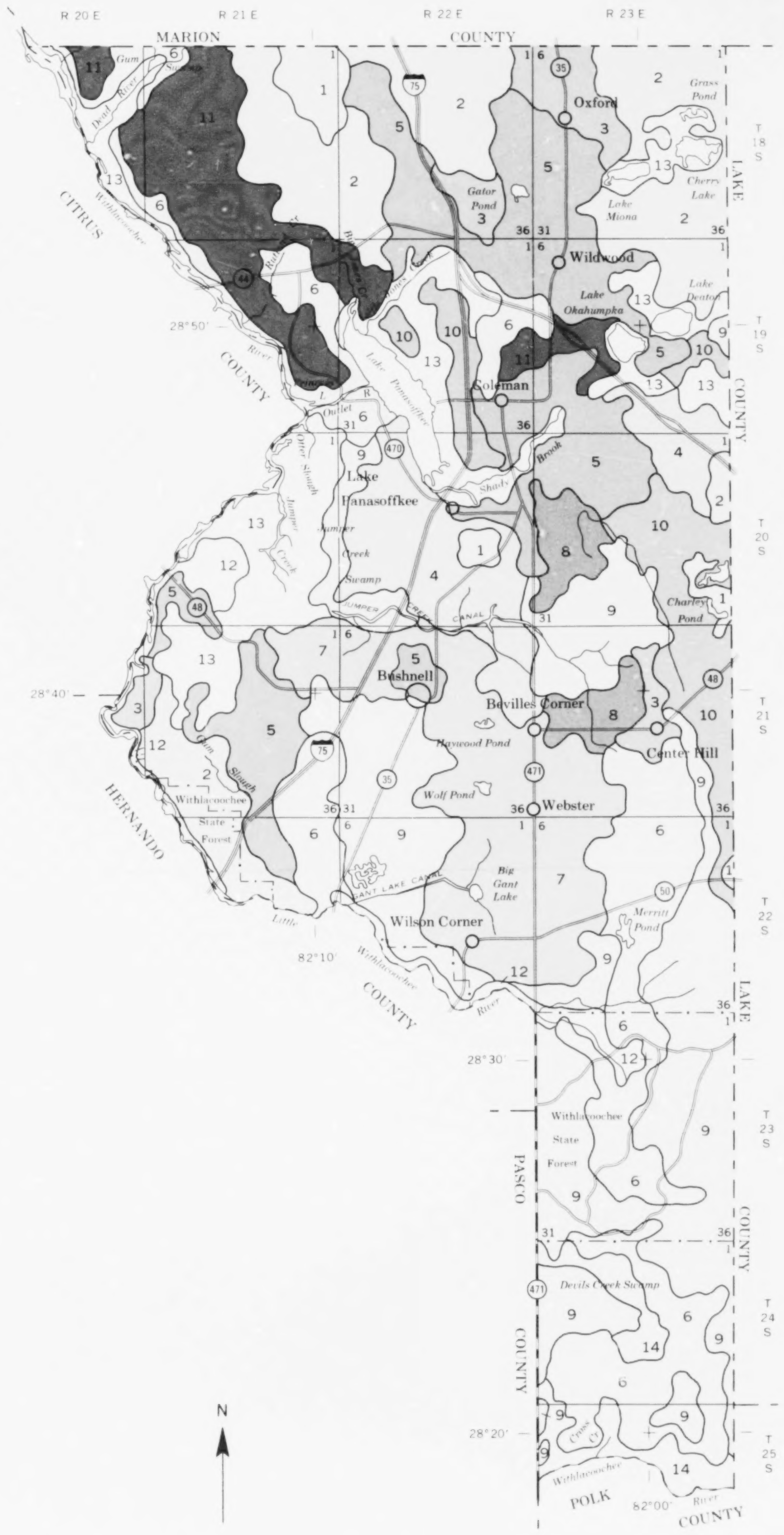

R 20 E
R 21 E
R 22 E
R 23 E
MARION
COUNTY
CITRUS
COUNTY
HERNANDO
COUNTY
LAKE
COUNTY
LAKE
COUNTY
PASCO
COUNTY
POLK
COUNTY
T 18 S
T 19 S
T 20 S
T 21 S
T 22 S
T 23 S
T 24 S
T 25 S
28°50'
28°40'
28°30'
28°20'
82°10'
82°00'
Oxford
Wildwood
Coleman
Lake Panasoffkee
Bushnell
Bevilles Corner
Center Hill
Webster
Wilson Corner
Gator Pond
Lake Miona
Cherry Lake
Grass Pond
Lake Deaton
Lake Okahumpka
Charles Pond
Jumper Creek Swamp
Haywood Pond
Wolf Pond
Big Gant Lake
Merritt Pond
Devils Creek Swamp
Withlacoochee State Forest
Withlacoochee River
Outlet River
Shady Brook
Gant Lake Canal
Little Withlacoochee River
75
35
44
48
470
471
50
N

LEGEND

SANDY SOILS OF THE UPLAND RIDGES

1	Astatula Nearly level to strongly sloping, excessively drained soils that are sandy to a depth of more than 80 inches
2	Candler-Millhopper-Apopka Nearly level to strongly sloping, excessively drained to moderately well drained, sandy soils; most are sandy throughout, and some have a loamy subsoil at a depth of more than 40 inches
3	Lake-Arredondo-Millhopper Nearly level to gently sloping, excessively drained to moderately well drained, sandy soils; some are sandy throughout, and some have a loamy subsoil at a depth of more than 40 inches
4	Tavares-Adamsville Nearly level to gently sloping, moderately well drained and somewhat poorly drained soils that are sandy to a depth of more than 80 inches
5	Sparr-Millhopper-Sumterville Nearly level to gently sloping, somewhat poorly drained and moderately well drained, sandy soils; most have a loamy subsoil at a depth of more than 40 inches, and some have a clayey subsoil at a depth of 20 to 40 inches

SANDY SOILS OF THE LOW RIDGES

6	Paisley-Ft. Green-Vero Nearly level to gently sloping, poorly drained, sandy soils; some have a clayey or loamy subsoil, and some are sandy and dark in the upper part of the subsoil and loamy and clayey in the lower part
7	Sparr-Seffner-Ona Nearly level to gently sloping, somewhat poorly drained to poorly drained, sandy soils; some have a loamy subsoil at a depth of more than 40 inches, some are sandy throughout, and some have a sandy, dark subsoil within a depth of 20 inches
8	Sumterville-Mabel-Ft. Green Nearly level to gently sloping, somewhat poorly drained and poorly drained, sandy soils; most have a clayey subsoil, and some have a loamy subsoil

SANDY SOILS OF THE FLATWOODS AND DEPRESSIONS

9	EauGallie-Delray Nearly level, poorly drained and very poorly drained, sandy soils; some have a sandy, dark subsoil within 30 inches of the surface, and all have a loamy subsoil at a depth of more than 40 inches
10	Myakka-Placid-Ona Nearly level, poorly drained and very poorly drained, sandy soils; some have a sandy, dark subsoil, and some are sandy throughout and do not have a subsoil
11	Vero-Floridana-Oldsmar Nearly level, poorly drained and very poorly drained, sandy soils; some are sandy and dark in the upper part of the subsoil and loamy or clayey in the lower part, and some have a loamy subsoil

MUCKY AND SANDY SOILS OF THE SWAMPS, MARSHES, AND RIVER FLOOD PLAINS

12	Floridana-Basinger Nearly level, very poorly drained and poorly drained, sandy soils; some have a loamy subsoil, and some have a sandy subsoil
13	Gator-Okeelanta-Terra Ceia Nearly level, very poorly drained, mucky soils; some are mucky to a depth of 52 inches or more, and some are mucky to a depth of 16 to 40 inches and are underlain by sandy or loamy material
14	Nittaw-Chobee Nearly level, very poorly drained, mucky and sandy soils that have a clayey or loamy subsoil

COMPILED 1986

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
UNIVERSITY OF FLORIDA
INSTITUTE OF FOOD AND AGRICULTURAL SCIENCES
AGRICULTURAL EXPERIMENT STATIONS AND SOIL SCIENCE DEPARTMENT
FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES

GENERAL SOIL MAP

SUMTER COUNTY, FLORIDA

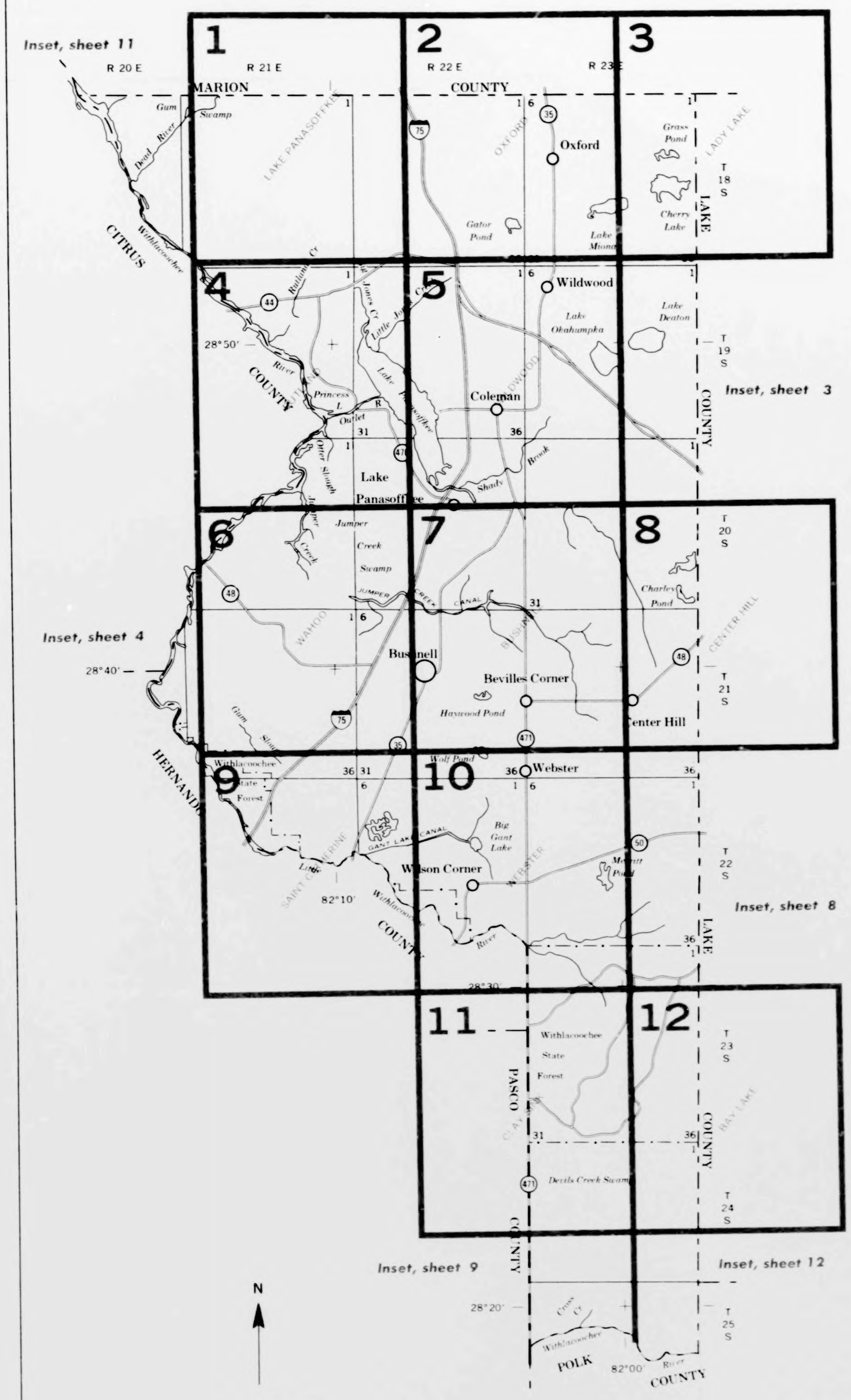
SECTIONALIZED TOWNSHIP

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

Scale 1:253,440
1 0 1 2 3 4 Miles
1 0 4 8 Km

Each area outlined on this map consists of more than one kind of soil. The map is thus meant for general planning rather than a basis for decisions on the use of specific tracts.

best copy available


1
2
3
4
5
6
7
8
9
10
11
12
Inset, sheet 11
R 20 E
R 21 E
R 22 E
R 23 E
MARION
COUNTY
Gum Swamp
Dead River
Withlacoochee
CITRUS
COUNTY
Oxford
Gator Pond
Lake Miona
Grass Pond
Cherry Lake
LAKE
T 18 S
Wildwood
Lake Okahumpka
Lake Deaton
T 19 S
Inset, sheet 3
28°50'
Princess L
Outlet
Coleman
Lake Panasoffkee
Shady Brook
Jumper Creek Swamp
T 20 S
Charles Pond
Inset, sheet 4
28°40'
Bushnell
Bevilles Corner
Haywood Pond
Center Hill
T 21 S
HERNANDO
Withlacoochee State Forest
Webster
Big Gant Lake
Wilson Corner
Mccoy Pond
T 22 S
Inset, sheet 8
82°10'
28°30'
Withlacoochee State Forest
PASCO
COUNTY
T 23 S
Devils Creek Swamp
T 24 S
Inset, sheet 9
Inset, sheet 12
28°20'
T 25 S
POLK
82°00'
COUNTY
N

SECTIONALIZED TOWNSHIP

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

INDEX TO MAP SHEETS
SUMTER COUNTY, FLORIDA

Scale 1:253,440

1 0 1 2 3 4 Miles

1 0 4 8 Km

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U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SUMTER COUNTY, FLORIDA

UNIVERSITY OF FLORIDA
INSTITUTE OF FOOD AND AGRICULTURAL SCIENCES
AGRICULTURAL EXPERIMENT STATIONS AND SOIL SCIENCE DEPARTMENT
FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES

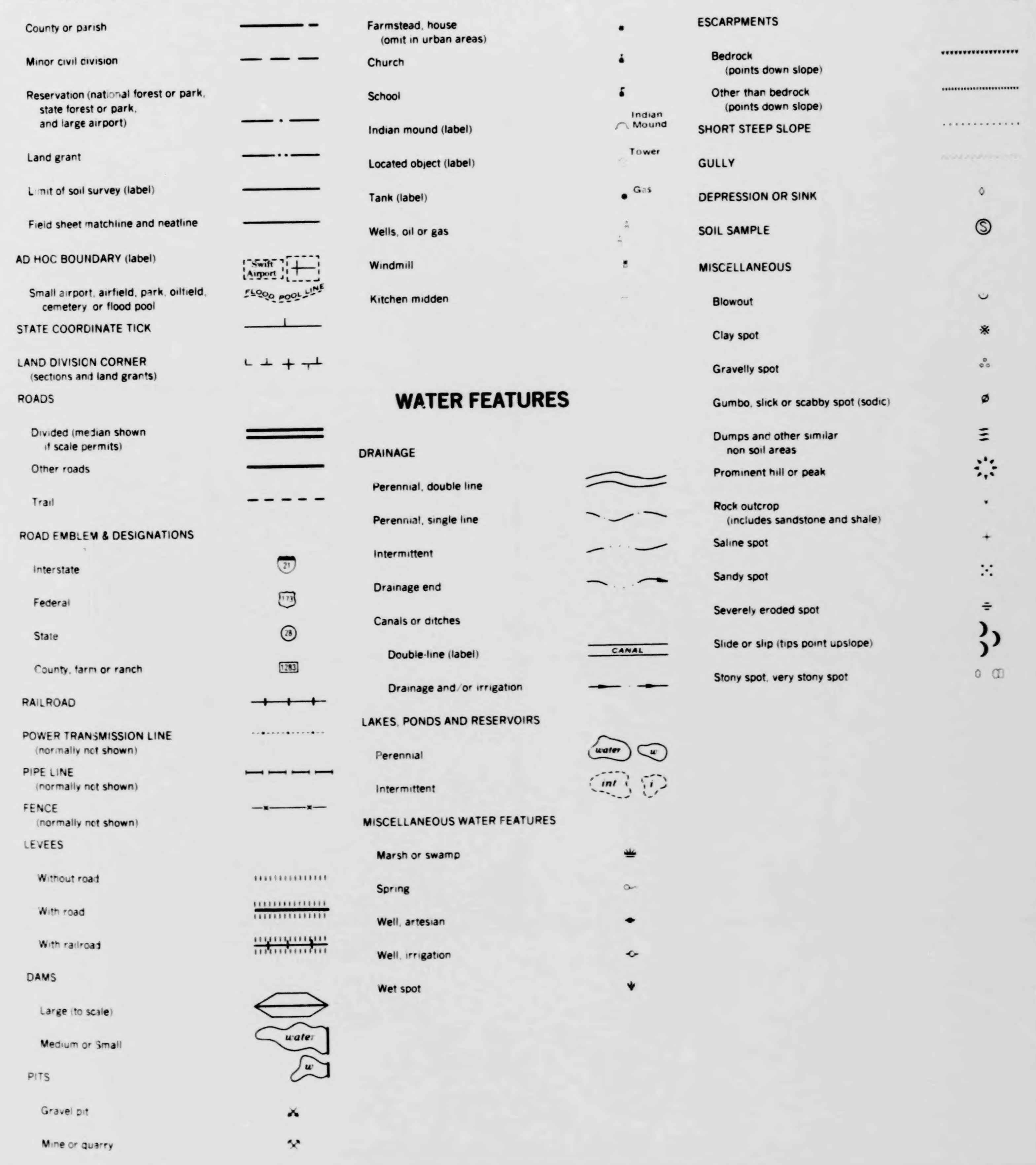
SOIL LEGEND

Soil map unit names without a slope phase are either nearly level or they are miscellaneous areas

SYMBOL	NAME
1	Arredondo fine sand, 0 to 5 percent slopes
3	Astatula fine sand, rolling
4	Candler sand, 0 to 5 percent slopes
5	Candler sand, 5 to 8 percent slopes
6	Kendrick fine sand, 0 to 5 percent slopes
8	Lake fine sand, 0 to 5 percent slopes
9	Paisley fine sand, bouldery subsurface
10	Sparr fine sand, 0 to 5 percent slopes
11	Millhopper sand, 0 to 5 percent slopes
13	Tavares fine sand, 0 to 5 percent slopes
14	Lake fine sand, 5 to 8 percent slopes
15	Adamsville fine sand, bouldery subsurface
16	Apopka fine sand, 0 to 5 percent slopes
17	Sumterville-Mabel-Tavares association, bouldery subsurface, 0 to 5 percent slopes
18	Okeelanta muck
19	Apopka fine sand, 5 to 8 percent slopes
20	Florahome sand, 0 to 5 percent slopes
21	EauGallie fine sand, bouldery subsurface
22	Smyrna fine sand
23	Ona fine sand
24	Basinger fine sand
25	Kanapaha sand, bouldery subsurface
26	Vero fine sand, bouldery subsurface
27	Sumterville fine sand, bouldery subsurface, 0 to 5 percent slopes
28	Seffner fine sand
29	Nittaw muck, frequently flooded
30	Placid fine sand, depressional
31	Myakka sand
32	Pompano fine sand
33	Sparr fine sand, bouldery subsurface, 0 to 5 percent slopes
34	Tarrytown sandy clay loam, bouldery subsurface
35	Pompano fine sand, depressional
36	Floridana mucky fine sand, depressional
37	Astatula fine sand, 0 to 8 percent slopes
39	Mabel fine sand, bouldery subsurface, 0 to 5 percent slopes
40	Millhopper sand, bouldery subsurface, 0 to 5 percent slopes
41	Everglades muck, frequently flooded
42	Adamsville fine sand
43	Basinger fine sand, depressional
44	Oldsmar fine sand, bouldery subsurface
45	Electra fine sand, bouldery subsurface
46	Ft. Green fine sand, bouldery subsurface
47	Okeelanta muck, frequently flooded
48	Malabar fine sand, frequently flooded
49	Terra Ceia muck, frequently flooded
50	Immokalee sand
51	Pits-Dumps complex
52	Candler sand, 8 to 12 percent slopes
53	Tavares fine sand, bouldery subsurface, 0 to 5 percent slopes
54	Monteocha fine sand, depressional
55	Pomello fine sand, 0 to 5 percent slopes
56	Vero fine sand, depressional
57	Gator muck, frequently flooded
58	Paisley fine sand, depressional
59	Arents, organic substratum
60	Delray fine sand, depressional
61	EauGallie fine sand
62	Urban land
63	Floridana-Basinger association, frequently flooded
64	Gator muck
65	Candler sand, bouldery subsurface, 0 to 5 percent slopes
66	Arredondo fine sand, bouldery subsurface, 0 to 5 percent slopes
67	Vero fine sand
68	Chobee loamy fine sand, frequently flooded

SYMBOL	NAME
42	Adamsville fine sand
15	Adamsville fine sand, bouldery subsurface
16	Apopka fine sand, 0 to 5 percent slopes
19	Apopka fine sand, 5 to 8 percent slopes
59	Arents, organic substratum
1	Arredondo fine sand, 0 to 5 percent slopes
66	Arredondo fine sand, bouldery subsurface, 0 to 5 percent slopes
37	Astatula fine sand, 0 to 8 percent slopes
3	Astatula fine sand, rolling
24	Basinger fine sand
43	Basinger fine sand, depressional
4	Candler sand, 0 to 5 percent slopes
5	Candler sand, 5 to 8 percent slopes
52	Candler sand, 8 to 12 percent slopes
65	Candler sand, bouldery subsurface, 0 to 5 percent slopes
68	Chobee loamy fine sand, frequently flooded
60	Delray fine sand, depressional
61	EauGallie fine sand
21	EauGallie fine sand, bouldery subsurface
45	Electra fine sand, bouldery subsurface
41	Everglades muck, frequently flooded
20	Florahome sand, 0 to 5 percent slopes
36	Floridana mucky fine sand, depressional
63	Floridana, Basinger association, frequently flooded
46	Ft. Green fine sand, bouldery subsurface
64	Gator muck
57	Gator muck, frequently flooded
50	Immokalee sand
25	Kanapaha sand, bouldery subsurface
6	Kendrick fine sand, 0 to 5 percent slopes
8	Lake fine sand, 0 to 5 percent slopes
14	Lake fine sand, 5 to 8 percent slopes
39	Mabel fine sand, bouldery subsurface, 0 to 5 percent slopes
48	Malabar fine sand, frequently flooded
11	Millhopper sand, 0 to 5 percent slopes
40	Millhopper sand, bouldery subsurface, 0 to 5 percent slopes
54	Monteocha fine sand, depressional
31	Myakka sand
29	Nittaw muck, frequently flooded
18	Okeelanta muck
47	Okeelanta muck, frequently flooded
44	Oldsmar fine sand, bouldery subsurface
23	Ona fine sand
9	Paisley fine sand, bouldery subsurface
58	Paisley fine sand, depressional
51	Pits-Dumps complex
30	Placid fine sand, depressional
55	Pomello fine sand, 0 to 5 percent slopes
32	Pompano fine sand
35	Pompano fine sand, depressional
28	Seffner fine sand
22	Smyrna fine sand
10	Sparr fine sand, 0 to 5 percent slopes
33	Sparr fine sand, bouldery subsurface, 0 to 5 percent slopes
27	Sumterville fine sand, bouldery subsurface, 0 to 5 percent slopes
17	Sumterville-Mabel-Tavares association, bouldery subsurface, 0 to 5 percent slopes
34	Tarrytown sandy clay loam, bouldery subsurface
13	Tavares fine sand, 0 to 5 percent slopes
53	Tavares fine sand, bouldery subsurface, 0 to 5 percent slopes
49	Terra Ceia muck, frequently flooded
62	Urban land
67	Vero fine sand
26	Vero fine sand, bouldery subsurface
56	Vero fine sand, depressional

CONVENTIONAL AND SPECIAL SYMBOLS LEGEND



CULTURAL FEATURES

BOUNDARIES

- National, state or province
- County or parish
- Minor civil division
- Reservation (national forest or park, state forest or park, and large airport)
- Land grant
- Limit of soil survey (label)
- Field sheet matchline and neatline

AD HOC BOUNDARY (label)

- Small airport, airfield, park, oilfield, cemetery or flood pool

STATE COORDINATE TICK

LAND DIVISION CORNER (sections and land grants)

ROADS

- Divided (median shown if scale permits)
- Other roads
- Trail

ROAD EMBLEM & DESIGNATIONS

- Interstate
- Federal
- State
- County, farm or ranch

RAILROAD

POWER TRANSMISSION LINE (normally not shown)

PIPE LINE (normally not shown)

FENCE (normally not shown)

LEVEES

- Without road
- With road
- With railroad

DAMS

- Large (to scale)
- Medium or Small

PITS

- Gravel pit
- Mine or quarry

MISCELLANEOUS CULTURAL FEATURES

- Farmstead, house (omit in urban areas)
- Church
- School
- Indian mound (label)
- Located object (label)
- Tank (label)
- Wells, oil or gas
- Windmill
- Kitchen midden

WATER FEATURES

DRAINAGE

- Perennial, double line
- Perennial, single line
- Intermittent
- Drainage end
- Canals or ditches
  - Double-line (label)
  - Drainage and/or irrigation

LAKES, PONDS AND RESERVOIRS

- Perennial
- Intermittent

MISCELLANEOUS WATER FEATURES

- Marsh or swamp
- Spring
- Well, artesian
- Well, irrigation
- Wet spot

SPECIAL SYMBOLS FOR SOIL SURVEY

SOIL DELINEATIONS AND SYMBOLS

ESCARPMENTS

- Bedrock (points down slope)
- Other than bedrock (points down slope)

SHORT STEEP SLOPE

GULLY

DEPRESSION OR SINK

SOIL SAMPLE

MISCELLANEOUS

- Blowout
- Clay spot
- Gravelly spot
- Gumbo, slick or scabby spot (sodic)
- Dumps and other similar non soil areas
- Prominent hill or peak
- Rock outcrop (includes sandstone and shale)
- Saline spot
- Sandy spot
- Severely eroded spot
- Slide or slip (tips point upslope)
- Stony spot, very stony spot

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